# Cottam Solar Project

# Environmental Statement

## Appendix~~:~~ 8.2~~:~~

## Potential Land Effects

## Revision A (Tracked)

Prepared by: Lanpro Services Ltd.

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APFP Regulation 5(2)(a)

Cottam
SOLAR PROJECT

## Contents

# Schedule of Changes

| Sheet Reference | Description of Changes | Reason for revision |
|---|---|---|
| C6.3.8.2.2.2.1 | RLCT4a Cottam 1 | Missing from initial submission |
| C6.3.8.2.8.2 | Natural Designations Cottam 2 | Missing from initial submission |
| C6.3.8.2.8.3 | Natural Designations Cottam 3a and 3b | Missing from initial submission |

Yellow highlight indicates potential significant effects may be identified during final assessment process on landscape receptor.

| National Character Area (NCA) / Regional Landscape Character Types (RLCT) Scoping Table | Site/Sites Cottam 1 5km Study Area | Site/Sites Cottam 2 5km Study Area | Site/Sites Cottam 3a 5km Study Area | Site/Sites Cottam 3b 5km Study Area |
|---|---|---|---|---|
| NCA Profile: 45 Northern Lincolnshire Edge with Coversands (NE554) | / | / | / | / |
| Elevated arable landscape with a distinct limestone cliff running north–south, the scarp slope providing extensive long views out to the west. | / | / | / | / |
| Double scarp around Scunthorpe of ironstone, and extensive areas of wind-blown sand, the Coversands, giving rise to infertile soils supporting heathland, acid grassland and oak/birch woodlands, with rare species such as woodlark and grayling butterfly. | | | | |
| Underlying limestone supporting small areas of calcareous grassland. | | | | |
| Few watercourses on the plateau, which lies between the rivers Trent and Ancholme which flow into the Humber, and is cut through in the south by the River Witham. | | | | |
| Semi-natural habitats of acid and calcareous grassland and broadleaved woodland are small and fragmented, and often associated with disused quarries. | | | | |
| Limited woodland cover, with patches of both broadleaves and conifers associated with infertile sandy soils, elsewhere occasional shelterbelts. | | | | |
| Long, straight roads and tracks, often with wide verges; Ermine Street follows the route of a key Roman north–south route. | / | / | / | / |
| Nucleated medieval settlement patterns following major routes, especially Ermine Street; sparse on higher land, with springline villages along the foot of the Cliff and some estates and parklands. | / | / | / | / |
| Other development comprises the major settlements of Lincoln and Scunthorpe, with their prominent landmarks of the cathedral and steelworks, and several active and re-used airfields prominent on the ridgetop. | / | / | / | / |
| Vernacular architecture and walling, especially in villages, of local warm-coloured limestone with dark brown pantiles. | / | / | / | / |
| Several ground features, especially on the plateau, include prehistoric burial mounds, Roman artefacts and abandoned medieval villages. | / | / | / | / |
| NCA Profile: 48 Trent and Belvoir Vales (NE429) | / | / | / | / |
| A gently undulating and low-lying landform in the main, with low ridges dividing shallow, broad river valleys, vales and flood plains. The mature, powerful River Trent flows north through the full length of the area, meandering across its broad flood plain and continuing to influence the physical and human geography of the area as it has done for thousands of years. | / | / | / | / |
| The bedrock geology of Triassic and Jurassic mudstones has given rise to fertile clayey soils across much of the area, while extensive deposits of alluvium and sand and gravel have given rise to a wider variety of soils, especially in the flood plains and over much of the eastern part of the NCA. | | | | |
| Agriculture is the dominant land use, with most farmland being used for growing cereals, oilseeds and other arable crops. While much pasture has been converted to arable use over the years, grazing is still significant in places, such as along the Trent and around settlements. | / | / | / | / |
| A regular pattern of medium to large fields enclosed by hawthorn hedgerows, and ditches in low-lying areas, dominates the landscape. | / | / | / | / |
| Very little semi-natural habitat remains across the area; however, areas of flood plain grazing marsh are still found in places along the Trent. | | | | |
| Extraction of sand and gravel deposits continues within the Trent flood plain and the area to the west of Lincoln. Many former sites of extraction have been flooded, introducing new waterbodies and new wetland habitats to the landscape. | | | | |
| Extensive use of red bricks and pantiles in the 19th century has contributed to the consistent character of traditional architecture within villages and farmsteads across the area. Stone hewn from harder courses within the mudstones, along with stone from neighbouring areas, also feature as building materials, especially in the churches. | / | / | / | / |
| A predominantly rural and sparsely settled area with small villages and dispersed farms linked by quiet lanes, contrasting with the busy market towns of Newark and Grantham, the cities of Nottingham and Lincoln, the major roads connecting them and the cross-country dual carriageways of the A1 and A46. | / | / | / | / |
| Immense coal-fired power stations in the north exert a visual influence over a wide area, not just because of their structures but also the plumes that rise from them and the pylons and power lines that are linked to them. The same applies to the gas-fired power station and sugar beet factory near Newark, albeit on a slightly smaller scale. | / | / | / | / |
| NCA Profile: 39 Humberhead Levels (NE339) | | | / | / |
| A low-lying, predominantly flat landscape, with large, regular and geometric arable fields without hedges but divided by ditches and dykes, many of which form important habitats and key corridors for species movement. | | | / | / |
| Much of the land is at or below mean high-water mark and maintained by drainage, with fertile soils giving rise to one of the most productive areas for root crops and cereals. | | | / | / |
| Variations in underlying deposits create differences within the overall flat farmed landscape, including lowland raised mires and lowland heathland, many of which are of international ecological and historical importance. | | | | |
| Sandy deposits give rise to lowland heath, which in places supports remnant birch and oak woodlands, with some conifer plantations. | | | | |
| Heavier soils around Fishlake and Sykehouse result in a smaller scale pastoral landscape, with small, thickly hedged fields, ditches and ponds, and a network of small lanes. | | | | |
| Important historic landscapes include the Isle of Axholme, with evidence of mediaeval open fields, the warps (land enriched by regular silting) near Goole and cables (long thin strip fields) around Thorne. | | | | |
| Widespread evidence of drainage history, in particular the extensive drainage from the 17th century, revealed through canalised rivers, dykes, old river courses, canals, bridges and pumping stations. | | | / | / |
| Views to distant horizons are often long and unbroken, with big expansive skies, and vertical elements like water towers, power stations and wind turbines are very prominent. | | | / | / |
| Floodplains, washlands and traditionally grazed alluvial flood meadows (or ings) associated with the major rivers and canals that cross the Levels give rise to important wetland habitats, supporting large numbers of wetland birds and wildfowl, especially over winter. | | | | |
| The waterlogged soils hold internationally important archaeological and palaeo-archaeological deposits. | | | | |

| Yellow highlight indicates potential significant effects may be identified during final assessment process on landscape receptor. | | | | |
|---|---|---|---|---|
| National Character Area (NCA) / Regional Landscape Character Types (RLCT) Scoping Table | **Site/Sites Cottam 1 5km Study Area** | **Site/Sites Cottam 2 5km Study Area** | **Site/Sites Cottam 3a 5km Study Area** | **Site/Sites Cottam 3b 5km Study Area** |
| Despite settlements, motorways and main roads, there is still a sense of remoteness to be experienced on the Levels, in particular on Thorne and Hatfield Moors and along the Lower Derwent Valley. | | | | |

Yellow highlight indicates potential significant effects may be identified during final assessment process on landscape receptor.

| National Character Area (NCA) / Regional Landscape Character Types (RLCT) Scoping Table | Site/Sites Cottam 1 5km Study Area | Site/Sites Cottam 2 5km Study Area | Site/Sites Cottam 3a 5km Study Area | Site/Sites Cottam 3b 5km Study Area |
|---|---|---|---|---|
| RLCT Profile: 2b Planned and Drained Fens and Carrlands (East Midlands) | | | / | / |
| Consistently low lying terrain and simple palette of land uses and landscape features gives visual unity and strong sense of identity. | | | / | / |
| Large scale open landscape of flat farmlands with extensive and uninterrupted vistas to distant horizons beneath vast skies. | | | / | / |
| 18th and 19th century enclosure characterises historic landscape patterns underpinned by complex history of drainage and enclosure stretching as far back as the late Saxon period in some places. | | | / | / |
| Significant areas at or below sea level, with modestly elevated areas acting as the focus of settlement. | | | / | / |
| Hierarchy of canalised rivers, high level drains and ditches divide the landscape up into rigid geometric patterns, dictating the grain of the landscape and patterns of movement and settlement. | | | / | / |
| Limited settlement pattern characterised by isolated farms and linear villages strung out along roads; majority of buildings in brick with tile roofs, further adding to uniform character of the landscape. | | | / | / |
| Rich and varied arable land uses, root crops, bulbs, vegetables and horticultural glass houses give the landscape a highly productive character and seasonal variations in colour and texture. | | | | |
| Strong sense of remoteness in expansive and sparsely settled areas although periods of intense activity during harvest. | | | | |
| RLCT Profile: 3a Floodplain Valleys (East Midlands) | / | | | |
| Deep alluvium and gravel deposits mask underlying bedrock geology to create wide, flat alluvial floodplains surrounded by rising landform of adjacent Landscape Character Types. | / | | | |
| River channels, often along managed courses, bordered by riparian habitat. | / | | | |
| Predominance of pastoral land use, with cereal growing increasing in some areas. 'Warping' areas subject to more intensive cereal growing. | / | | | |
| Limited woodland cover; however, steep riverside bluffs and areas close to settlement or on former gravel extraction sites notable for a higher level of woodland cover. | / | | | |
| Regular pattern of medium to large fields defined by hedgerows or post and wire fencing, breaking down and becoming open in some areas. | | | | |
| Hedgerow and riverside trees important component of landscape. Alder, Willow and Poplar are typical riverside trees. | | | | |
| Limited settlement and development in rural areas. | / | | | |
| Sewage Treatment Works and power stations common close to larger settlements that fringe the floodplains. | / | | | |
| Roads and communication routes often define the outer edges of the floodplain. | / | | | |
| Restoration of sand and gravel extraction sites to open water creates new character across many areas. | | | | |
| RLCT Profile: 4a Unwooded Vales (East Midlands) | / | / | / | / |
| Extensive, low lying rural landscape underlain by Triassic and Jurassic mudstones and clays and widespread superficial deposits. | / | / | / | / |
| Expansive long distance and panoramic views from higher ground at the margin of the vales gives a sense of visual containment. | / | / | / | / |
| Low hills and ridges gain visual prominence in an otherwise gently undulating landscape. | / | / | / | / |
| Complex drainage patterns of watercourses that flow within shallow undulations often flanked by pasture and riparian habitats. | / | / | / | / |
| Limited woodland cover; shelter belts and hedgerow trees gain greater visual significance and habitat value as a result. | / | / | / | / |
| Productive arable and pastoral farmland, with evidence of increasing reversion to arable cropping in recent times. | / | / | / | / |
| Regular pattern of medium sized fields enclosed by low and generally well maintained hedgerows and ditches in low lying areas; large modern fieldscapes evident in areas of arable reversion. | / | / | / | / |
| Sparsely settled with small villages and dispersed farms linked by quiet rural lanes. | / | / | / | / |
| RLCT Profile: 4b Wooded Vales (East Midlands) | / | / | / | / |
| Gently undulating landform formed over soft mudstone and clay geology, sharing many characteristics with the wider Unwooded Vales Landscape Character Type. | / | / | / | / |
| Deposits of superficial geology, particularly cover sands and till influences local land use and semi-natural habitat cover. | / | / | / | / |
| Low hills and ridges gain visual prominence; elevated landform fringing vales give broad sense of containment. | / | / | / | / |
| Numerous watercourses flow within shallow undulations often flanked by pasture and riparian habitat. | / | / | / | / |
| Relatively high levels of woodland cover, with notable tracts of ancient semi-natural woodland along outer fringes of parishes and large coniferous plantations. | / | / | / | / |
| Productive arable and pastoral farmland, with evidence of increasing reversion to arable cropping. | / | / | / | / |
| Irregular shaped assarted fields marked by belts of trees and tall hedgerows, juxtaposed with regular pattern of medium sized fields associated with enclosure of land, with low and generally well maintained hedgerows and ditches in low lying areas. | / | / | / | / |
| Open, modern fieldscapes created by hedgerow removal in areas of arable reversion. | / | / | / | / |

Yellow highlight indicates potential significant effects may be identified during final assessment process on landscape receptor.

| National Character Area (NCA) / Regional Landscape Character Types (RLCT) Scoping Table | Site/Sites Cottam 1 5km Study Area | Site/Sites Cottam 2 5km Study Area | Site/Sites Cottam 3a 5km Study Area | Site/Sites Cottam 3b 5km Study Area |
|---|---|---|---|---|
| RLCT Profile: 6a Limestone Scarps and Dipsolpes (East Midlands) | / | / | | |
| Limestone escarpment and dip-slope with strong north south alignment. | / | / | | |
| Diverse patterns of land use and regular spring line settlements along scarp in contrast to the more open and exposed dip slope. | | / | | |
| Limestone villages retain strong historic character, and provide strong link to the nature of the underlying geology. | / | / | | |
| Ermine Street forms a significant feature of the landscape, and continues to dictate landscape patterns and boundaries. | / | | | |
| Place names and some indicator species are reminders of once widespread heathland. | | | | |
| Evidence of declining landscape condition across intensively farmed areas. | / | / | | |
| LCA Profile: 1 Laughton Woods (West Lindsey) | | | / | / |
| Flat, open agricultural landscape dominated by large conifer plantations. | | | / | / |
| Large, smooth textured fields, with few hedgerow or boundary fences, subdivided by a grid of drainage ditches. | | | / | / |
| Small blocks of deciduous woodland shelter belts and occasional individual oaks. | | | / | / |
| Settlements are 'islands' of buildings and trees in the flat landscape; churches and landmarks. | | | / | / |
| String of small settlements along the River Trent with few trees and no churches. | | | / | / |
| Panoramic views and big skies. | | | / | / |
| LCA Profile: 2 Trent Valley (West Lindsey) | / | / | / | / |
| Low-lying, gently undulating landform with higher terrain to east and south of Gainsborough. | / | / | / | / |
| Significant blocks of deciduous woodland, good hedgerows and hedgerow trees create a relatively enclosed landscape. | / | / | / | / |
| River Trent and its adjacent washlands are enclosed by steep flood embankments. | / | / | / | / |
| Historic parkland landscape including a medieval deer park, and landmarks such as the ruins of Torksey Castle. | | | | |
| Main roads are significant features in the landscape; recent development concentrated along the main road, bypassing original village centres. | / | / | / | / |
| Views towards the west are dominated by the power stations along the River Trent. | / | / | / | / |
| LCA Profile: 3 The Till Vale (West Lindsey) | / | / | / | / |
| Agricultural landscape with large, flat open fields. | / | / | / | / |
| Some fields have low hawthorn hedgerows, with few hedgerow trees. | / | / | / | / |
| Small blocks of mixed woodland and shelter belts | / | / | / | / |
| Extensive network of rivers, dykes and ditches, which have little visual presence in the landscape. | / | / | / | / |
| String of small nucleated settlements on higher undulating grounds along a minor north south route; sequence of views to landmark churches. | / | / | / | / |
| Large farm buildings and individual farmhouse on flatter land to the east. | / | / | / | / |
| Ancient enclosure roads with characteric wide verges and hedgerow boundaries, paricularly in the east. | / | / | / | / |
| Long westward views to the power station on the River Trent, and eastward views to the scarp face of the Lincoln 'Cliff'. | / | / | / | / |
| LCA Profile: 4 The Cliff (West Lindsey) | / | / | / | |
| Straight, limestone capped scarp slope, with a due north-south alignment. | / | / | / | / |
| Diverse patterns of mixed pasture and arable land with good hedgerow boundaries. | / | / | / | / |
| Springline villages at the foot of the scarp with historic character and many trees. | / | / | / | / |
| Historic halls and associated parkland landscapes. | / | / | / | / |
| Pond and lakes along the springline. | / | / | / | / |

| Landscape Receptor – Regional Scale Landscape Character – 4b: Wooded Vales (Cottam 1) |
|---|

**Receptor Baseline:**

Within the Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4b Wooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Wooded Vales does not extend into the 2km Study Area, and only occupies the western most extent of the 5km Study Area. At the eastern most edge of RLCT 4a, the boundary is shared with RLCT Profile: 6a Limestone Scarps and Dipslopes.

The sites within Cottam 1 can be sub-divided into two distinct land areas;

- Cottam 1 North
- Cottam 1 South

**Key Features:**

Cottam 1 North:
This refers to the area located to the north of Ingham Road and to the west of this area there are the settlements of Kexby, Willingham by Stow, Normanby by Stow and Stow, which are located to each side of the B1241 (Sturton Road and Stow Road). To the centre of this area is the small hamlet of Coates and to the east there are the settlements of Fillingham and Ingham, which are located to each side of the B1398. The area is bisected by a secondary road, known as Fillingham Lane which then runs into Willingham Road, and which links the settlements of Willingham by Stow to Fillingham. Wooded Vales within the 5km study area for Cottam 1 sits within the Gate Burton settlement and carries itself north to the strong woodland that defines the landscape to the east of the settlements of Knaith and Lea. Some of the woodlands and parks within this Landscape Character type include Burton Wood, Park Plantation, Knaith Park, Thurlby Wood, Bass Wood Willoughton Wood and Birch Wood. Key characteristics of the Wooded Vales Landscape Character Type is that it is a gently undulating landform formed over soft mudstone and clay geology, sharing many characteristics with the wider Unwooded Vales. Within this landscape character type there is a relatively high level of woodland cover, with notable tracts of ancient semi-natural woodland along outer fringes of parishes and large coniferous plantations.

Cottam 1 South:
This refers to the area located to the south of Ingham Road and to the west of this area the settlements of Normanby by Stow and Sturton by Stow are located to each side of the B1241 (Sturton Road and Stow Road). To the centre of this area are a number of isolated residential properties and farmsteads. To the east of this area, the settlements of Cammeringham, Brattleby, Aisthorpe and Scampton are nestled into the foot of the ridgeline. Land within the Cottam 1 south Study Area also contains areas defined as 'Built Up Area' which is associated with the primary settlement of Gate Burton, and the main highway corridors including the A1500 (Tillbridge Road), which is a Roman road and the Gainsborough to Lincoln mainline railway. Numerous watercourses flow through the area within shallow undulations often flanked by pasture and riparian habitat, particularly to the southeast of Gainsborough. This Landscape Character type is also sparsely settled with small villages and dispersed farms linked by quiet rural winding lanes often flanked by tall hedgerows and tree belts. Woodlands are localized variations in the landform, where they shorten views and obstruct wide panoramas to create a more intimate scale landscape than what is experienced within the Unwooded Vales Landscape Character Type.

**Character Context:**

Cottam 1 is mainly located within RLCT 4a: Unwooded Vales, where the land area is found to the north and south of Ingham Road and in the context of the settlements of Coates, Thorpe in the Fallows, Sturton by Stow, Bransby, Kexby, Willingham by Stow, Normanby by Stow and Stow. To the east of Cottam 1, the landscape character type RLCT 6a: Limestone Scarps and Dipslopes shares the outer 2km Study Area (with RLCT 4a) and then extends into the 5km Study Area. The ridgeline (to the east) then gives strong containment where the settlements of Fillingham, Ingham and Cammeringham mark the boundary with the B1398.

RLCT 4b: Wooded Vales landscape character type is found to the west of the Cottam 1 Site/Sites on the outer bounds of the 5km study area and outside of the 2km study area.

RLCT 4b is not considered to form part of the immediate landscape context for the Cottam 1 Site/Sites since the character type is located to the west of the settlements Kexby, Willingham by Stow, Normanby by Stow and Stow where the intervening woodlands and arable land use provide strong element of separation in the landscape.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Mitigation (Operation Magnitude of Change at Year 15) |
|---|---|---|---|
| In terms of forces for change, the Wooded Vales aims to promote new woodland planting as this is a significant component of the landscape. The aim should be to also protect the distinctive character of the settlements and consider the visual impact of any new development. The restoration of hedgerows should also be given priority to strengthen the field pattern and enhance linkages between woodlands. The impact on the setting of village churches is also particularly important as these are distinctive local landmarks. There are regular patterns of enclosure and modern arable fields where hedgerows have been removed, but due to the abundance of large woodland blocks this helps reinforce a sense of enclosure.<br><br>**Overall,** the susceptibility of the Wooded Vales is conditioned by a number of key forces for change that have the potential to shape the future of the landscape. These include the agricultural intensification and farm amalgamation that is resulting in the loss or damage of many typical landscape features, including traditional patterns of field boundaries, remnants of ridge and furrow, and grasslands. The loss of grazing fields around the edges of villages that is leading to a more homogenous landscape.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Wooded Vales appeal to the visual senses where extensive panoramas are possible, often framed by larger areas of woodland. There are areas where rising landform allows opportunity for extensive views that uninterrupted by existing vegetation such as areas to the SE of Gainsborough within the landscape to the west of Upton.<br><br>*Cultural:* The landscape shows evidence of small villages, hamlets and farms that are evenly distributed across the landscape. This includes settlement to the southwest of Gainsborough including Priory Farm, Padmoor Farm and Park Springs Farm which fall within the Area of Greater Landscape Value (AGLV).<br><br>*Natural:* There are large areas of ancient and species-rich native woodland juxtaposed with regular blocks of coniferous plantations, particularly to the northeast of Gainsborough within the AGLV. Sizable areas of ancient wet woodland are also notable along several watercourses. Many wet woodland sites are characterized by native broadleaved species.<br><br>*Recreation and Enjoyment:* The Wooded Vales are valued for recreation which often focused on the PRoW network that follows the river corridor and to the SE of Gainsborough towards Upton.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' endorsed by the strong agricultural character, with wide areas retaining a sense of rural tranquility and intactness, notably where ancient hedgerow patterns, woodlands and winding rural lanes are a prominent characteristic.<br><br>*Health and Wellbeing:* The Wooded Vales provide a very limited network of PRoW meaning that the river floodplain is the focus for recreation.<br><br>*Important Spatial Function:* The landscape benefits from the woods and heaths that occupy the boundaries of the Vales parishes, and many village place names also provide some evidence with several woodlands being named after a local village such as Burton Wood and Lea Wood, indicating they once belonged to a particular community.<br><br>**Overall,** the value of the Wooded Vales is shaped by the sparsely settled landscape that has seen relatively little urban growth. The landscape possesses an ancient framework of sinuous belts of trees and hedgerows defining irregular shaped fields and parish boundaries. However, in recent decades the prominence of arable farming has resulted in the loss or damage of some typical landscape features. | *Character:* Woodland is a significant component of the landscape, but the distinctive character of the settlements are also important elements of the landscape that add to the 'sense of place'<br><br>*Quality:* Agricultural intensification and farm amalgamation is resulting in the loss or damage of many typical landscape features, including traditional field boundaries, remnant ridge and furrow and grasslands.<br><br>*Value:* The dense woodland cover helps create a mixed pattern of land use along with the arable land use and several watercourses. This is a sparsely settled landscape with relatively little urban growth.<br><br>*Capacity:* Features such as the woodland blocks contribute to the sense of enclosure with many being named after local villages, but the distinctive character of settlements and their associated tree cover show less tolerance for landscape change. | The aim should be to plan new woodland in the most suitable locations. This may include in and around settlements, where woodland would help integrate new development into the landscape and in more intimate low-lying areas, where woodland would help create a mixed pattern of land use. Consideration should also be given to the management of existing trees and woodland, enhancing biodiversity value and age structure through new planting and the creation of woodland edge habitats. An increase in grassland reversion should also be encouraged, increasing the occurrence of semi-natural habitats. |
| Medium | Medium to High | **Medium to High** | **Not Applicable** |

| Landscape Receptor – Regional Scale Landscape Character – 3a: Floodplain Valleys (Cottam 1) |
|---|

**Receptor Baseline:**

Within the Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 3a Floodplain Valleys, which is shown on **Figure 8.5 [C6.4.8.5]**. Floodplain Valleys do not extend into the 2km Study Area and only occur within the western region of the 5km Study Area. The Floodplain Valleys mainly occur to the west of a group of settlements that extend south from Gainsborough and include Lea, Knaith, Gate Burton, Marton, Brampton and Torksey.

The Site/Sites within Cottam 1 can be sub-divided into two distinct areas:

- Cottam 1 North
- Cottam 1 South

**Key Features:**

Cottam 1 North:
The land within the Floodplain Valleys is only a very small parcel of land that is generally sloping towards the west and the river Trent, with levels ranging from approximately 10m AOD to the eastern edge of the character area and falling to approximately 2m AOD at the edge of the river Trent corridor. It comprises the floodplain of permanent pasture on riverside meadows and arable fields on the drier gravel terraces. Key characteristics of the Floodplain Valleys are deep alluvium and gravel deposits that that mask underlying bedrock geology to create wide, flat alluvial floodplains surrounded by rising landform of adjacent Landscape Character Types. Hedgerow and riverside trees are also an important component of the landscape within this character type where Alder, Willow and Poplar are typical riverside trees and there are swathes of riverine woodland lining the river corridor, particularly the sharp 'U' bend in the river at Trent Port. Sewage treatment works and power stations are common close to larger settlements that fringe the floodplains with the nearest being Cottam Power Station outside the 5km Study Area to the southwest of Cottam 1. Most of the East Midlands region's major towns are located adjacent to the floodplains and have a strong but localized influence on their character. In other places, the floodplains constitute some of the most remote and peaceful terrestrial lowland areas in the East Midlands. The landscape around Marton shows the influence of settlement through the presence of a strategic road network, which exerts a strong influence on local character. In contrast, there are also areas where the open, unsettled character of the landscape is easily recognizable, creating a distinct 'sense of place'.

Cottam 1 South:
Whilst the floodplains themselves are generally devoid of settlement, the rivers and neighboring gravel terraces have been a focus for settlement for several thousands of years. The land within the Floodplain Valleys borders areas defined as 'Built Up Area' which is associated with the settlement of Marton and includes strategic highway corridors along the A1500 (Stow Park Road and Tillbridge Lane), which is a Roman road and the A156 which passes through Marton. This is typical of most the region's major towns that are located adjacent to floodplains and exert a strong but localized influence on their character. This landscape character type has limited woodland cover; however, steep riverside bluffs and areas close to settlement or on former gravel extraction sites are notable for a higher level of woodland cover and this is typically evident around the settlement of Marton. Historically, the floodplains would have shared common land use characteristics with a predominance of permanent pasture on riverside meadows and arable fields on drier gravel terraces and this is evident in the landscape around Marton where there is a mixture of pasture and arable land use.

**Character Context:**

Cottam 1 is mainly located within RLCT 4a: Unwooded Vales, where the land area is found to the north and south of Ingham Road and in the context of the settlements of Coates, Thorpe in the Fallows, Sturton by Stow, Bransby, Kexby, Willingham by Stow, Normanby by Stow and Stow. To the east of Cottam 1, the landscape character type RLCT 6a: Limestone Scarps and Dipslopes shares the outer 2km Study Area (with RLCT 4a) and then extends into the 5km Study Area. The ridgeline (to the east) then gives strong containment where the settlements of Fillingham, Ingham and Cammeringham mark the boundary with the B1398.

RLCT 3a: Floodplain Valleys landscape character type is found to the west of the Cottam 1 Site/Sites on the outer bounds of the 5km study area and outside of the 2km study area.

RLCT 3a is not considered to form part of the immediate landscape context for the Cottam 1 Site/Sites since the character type is located to the west of the settlements Kexby, Willingham by Stow, Normanby by Stow and Stow where the intervening woodlands and arable land use provide strong elements of separation in the landscape.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Mitigation (Operation Magnitude of Change at Year 15) |
|---|---|---|---|
| In terms of forces for change, the Floodplain Valleys aims to protect the open and unsettled character of the landscape from inappropriate development and that tree planting around settlement fringes can help with integration and help contribute to the overall perception of a well treed landscape. The changes from flood risk and engineered solutions are also changing the landscape, but there is potential for landscape restoration projects to assist with mitigation of this change. The potential for river landscape to change is also a key consideration, but there is potential to introduce positive landscape interventions such as biodiversity and nature conservation initiatives<br><br>**Overall,** the susceptibility of the Floodplain Valleys is conditioned by a number of key forces for change that have the potential to shape the future of the landscape. These include the impact of settlement on the edges of the river floodplain, the interventions associated with flood risk, the shifting of river channels, sand and gravel extraction and power and energy infrastructure. There are however also significant benefits to be gained from a range of landscape and biodiversity interventions such as restoration projects.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Floodplain Valleys appeal to the visual senses in that vast stretches of the floodplain retain an intact and traditional character, despite the intrusion from sand and gravel extraction and power and energy infrastructure.<br><br>*Cultural:* The landscape shows evidence of archaeology and built heritage particularly where there are road crossings over the river or views to farms and villages on drier, more elevated land. Marton is typical of the many settlements in the floodplain that are linear, stretching out along roads parallel to the main river channel. Historic sites include mill sites and races and canalized sections of rivers and associated locks and sluices.<br><br>*Natural:* There are extensive expanses of semi-natural habitat along the river corridor including permanent grazing land interspersed with meandering river channels fringed by riparian habitats and riverside trees. Several former mineral sites are designated as Sites of Special Scientific Interest (SSSI).<br><br>*Recreation and Enjoyment:* The Floodplain Valleys are valued for recreation and whilst there is a marked contrast between areas that remote, other areas close to settlements such Marton and Gate Burton have access to the floodplain landscape including core paths such as the Trent Valley Way.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' in that field patterns are largely geometric with the pattern breaking down in some places to create large areas of farmland.<br><br>*Health and Wellbeing:* The floodplain landscape provides facilities that are well-used and valued by local communities and visitors including for informal recreation and nature, notably for overwintering birds.<br><br>*Important Spatial Function:* The Floodplain Valleys are host to numerous gateways established at strategic river crossings where settlement is typically located at the edge of the floodplain with riverside settlements. Marton is typically a gateway settlement with historic origins including the Grade I Listed Church of St Margaret of Antioch.<br><br>**Overall,** the value of the Floodplain Valleys is shaped by the historical predominance of permanent pasture on riverside meadows that constitute some of the most remote and peaceful terrestrial lowland areas of the East Midlands. This lowland landscape is sparsely settled and tranquil in parts. This is in contrast to the landscape to the west where the influence of urban areas such as Retford and sand and gravel extraction have given rise to significant encroachment. | *Character:*<br>Medium landscape tolerance with some scope for change to landscape character. Although there is an aim to protect the open character, tree planting around the edges of settlements can help with integration of built form.<br><br>*Quality:* The predominance of permanent pasture on riverside meadows constitutes some of the most remote and peaceful terrestrial lowland areas of the East Midlands.<br><br>*Value:* Lower landscape tolerance or scope for landscape change since the landscape has a distinctive scenic quality and is valued by local communities and visitors for informal recreation and nature conservation, notably for overwintering birds.<br><br>*Capacity:* Features contribute to a sense of place and illustrate a time-depth and could for example not be replaced other than in the long term. | The aim of the Floodplain Valleys should be to plant small-scale woodlands and linear riverine belts of planting or associated with lakes and pools within the pastoral floodplain with larger scale farm woods with more open agricultural landscapes. Limited native tree planting may also be appropriate.<br><br>The visual intrusion from sand and gravel extraction is also a recognised feature of the landscape, but in producing restoration plans there is an opportunity to maximize biodiversity benefits. The impact on long distance views from surrounding towns and villages is also a key consideration. |
| Medium | Medium to High | **Medium to High** | **Not Applicable** |

| Landscape Receptor – Regional Scale Landscape Character – 6a: Limestone Scarps and Dipslopes (Cottam 1) |
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**Receptor Baseline:**

Within the Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 6a Limestone Scarps and Dipslopes, which is shown on **Figure 8.5 [C6.4.8.5]**. Limestone Scarps and Dipslopes only occupies the eastern most edge of the of the 2km Study Area where it shares a boundary with RLCT Profile: 4a Unwooded Vales, and an eastern section of the 5km Study Area. The northwestern extent of the 5km Study Area is also host to a small part of RLCT Profile 3a: Floodplain Valleys and RLCT Profile: 4b Wooded Vales. The Limestone Scarps and Dipslopes Landscape Character Type is part of the Jurassic Limestone belt that runs from Dorset to the Humber.

The sites within Cottam 1 can be sub-divided into two distinct land areas:

- Cottam 1 North
- Cottam 1 South

**Key Features:**

Cottam 1 North:
This refers to the area located to the north of Ingham Road and to the west of this area there are the settlements of Kexby, Willingham by Stow, Normanby by Stow and Stow, which are located to each side of the B1241 (Sturton Road and Stow Road). To the centre of this area is the small hamlet of Coates and to the east there are the settlements of Fillingham, Ingham, which are located to each side of the B1398. The area is bisected by a secondary road, known as Fillingham Lane which then runs into Willingham Road, and which links the settlements of Willingham by Stow to Fillingham. Another key characteristic of this regional landscape character area is the strong diverse pattern of land use and regular spring line settlements along the scarp in contrast to the more open and exposed dip slope. Ermine Street forms a significant feature of this landscape and continues to dictate landscape patterns and boundaries. Streams are relatively insubstantial and occupy gentle folds in the underlying landscape. These streams are the focus of settlements such as Glentworth, Fillingham and Ingham.

Cottam 1 South:
This refers to the area located to the south of Ingham Road and to the west of this area the settlements of Normanby by Stow and Sturton by Stow are located to each side of the B1241 (Sturton Road and Stow Road). To the centre of this area are several isolated residential properties and farmsteads. To the east of this area, the settlements of Cammeringham, Brattleby, Aisthorpe and Scampton are nestled into the foot of the ridgeline.
Key characteristics of the Limestone Scarps and Dipslopes is a strong north south alignment. Limestone villages within this regional landscape character type retain strong historic character and provide a defined link to the nature of the underlying geology. The differences in soils and landform have a significance influence on land cover. The steeper scarp slopes are predominantly pastoral with intermittent woodlands, and this is a particular feature at Cammeringham, Brattleby and Aisthorpe. In contrast, where the scarp slope is noticeably gentler where arable fields can be observed to roll over the crest of the edge and down into the adjacent vale. This gentle arable characteristic is most noticeable in the landscape between Cammeringham and Brattleby. Intensive agricultural land uses have diminished the extent of semi-natural habitat across the landscape along with the low and generally poor quality of hedgerows. The limestone villages are a key feature of the landscape, particularly Stow, Sturton by Stow, Bransby and the small hamlet of Thorpe in the Fallows. Some small remnant species-rich grasslands and woodlands are locally significant, particularly when associated with parklands. Such parkland landscapes are common around Cammeringham, Brattleby and Aisthorpe.

**Character Context:**

Cottam 1 is mainly located within RLCT 4a: Unwooded Vales, where the land area is found to the north and south of Ingham Road and in the context of the settlements of Coates, Thorpe in the Fallows, Sturton by Stow, Bransby, Kexby, Willingham by Stow, Normanby by Stow and Stow. To the east of Cottam 1, the landscape character type RLCT 6a: Limestone Scarps and Dipslopes shares the outer 2km Study Area (with RLCT 4a) and then extends into the 5km Study Area. The ridgeline (to the east) then gives strong containment where the settlements of Fillingham, Ingham and Cammeringham mark the boundary with the B1398.

RLCT 6a: Limestone Scarps and Dipslopes landscape character type is found to the east of the Cottam 1 Site/Sites on the outer bounds of the 2km study area and within the 5km Study Area.

RLCT 6a is considered to form part of the immediate landscape context for the Cottam 1 Site/Sites since the character type is in the context of the settlements Fillingham, Ingham and Cammeringham where the landform rises towards the ridgeline and there may be few elements of separation within the landscape.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Mitigation (Operation Magnitude of Change at Year 15) |
|---|---|---|---|
| In terms of forces for change, the Limestone Scarps and Dipslopes aims to plan for new woodlands, ensuring new planting schemes take full advantage of opportunities to enhance the scarp slope. The aims should also be to ensure there is consideration of the relationship between Limestone Scarps and Dipslopes and Unwooded Vales to ensure new planting does not negatively impact upon the open character of the adjoining Landscape Character Type. The pressures are centered around existing woodlands that are often small and isolated and suffer from lack of management. The high demand for aggregates, and pressure for new and expanded quarries, is likely to further damage the landscape. Pressure from arable cultivation has resulted in field enlargement, removing field boundaries, and creating a more open landscape. Roman roads are a key feature, but they are under threat from lack of management and inappropriate planting.<br><br>**Overall,** the susceptibility of the Limestone Scarps and Dipslopes is conditioned by the escarpment, known locally as the Lincolnshire Edge or Cliff, that rises above the Trent Vale and forms a prominent and distinctive landscape feature. The Roman roads are also a key consideration created to link London with York. Superimposed on the north south axis of the Roman road is a less dominant but nonetheless distinctive pattern of east west routes and field boundaries that add geometric character. The relevant characteristics of the landscape therefore have a moderate ability to accommodate change without undue adverse effects.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Limestone Scarps and Dipslopes appeal to the visual senses where woodland along the scarp slope is a significant feature, defining the ridgeline and helping to contain settlement. Views towards Lincoln Cathedral are part of key views across the area.<br><br>*Cultural:* The landscape shows evidence of Roman roads and network of enclosure roads that are distinctive features of the Limestone Scarps and Dipslopes. The course of Ermine Street is an important asset. Airfields are also a feature providing a link with the wartime past and a focal point for new settlements.<br><br>*Natural:* There is a diverse character with pasture, arable, woodland and hedgerows that create an intricate and textured landscape. In some places, the water table is close to the surface, resulting in several streams emerging close to the top of the scarp and flowing eastwards.<br><br>*Recreation and Enjoyment:* The Scarps and Dipslopes are valued for recreation which often focuses on the locations where the crests of ridges allow views across the area, in particular towards Lincoln Cathedral. The course of Ermine Street is a recreation and habitat corridor, which contributes to biodiversity and landscape character.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' with a subtle regimented character that is reinforced by the geometric patterns of fields. The transport routes and regularity of the scarp edge villages also exert a strong geometry.<br><br>*Health and Wellbeing:* The Scarps and Dipslopes provide a rural landscape that has remained largely intact where the landscape condition is generally good. There are areas of pastoral landscapes and wooded scarps interspersed with small stone-built villages and this helps retain a tangible connection to the landscape character.<br><br>*Important Spatial Function:* The landscape benefits from its low elevation, and the views from these lowlands towards the elevated areas, which act as a strong backdrop.<br><br>**Overall,** the value of the Limestone Scarps and Dipslopes is shaped by the Jurassic limestone belt that is reminiscent of the Cotswolds, particularly in terms of the large-scale arable land uses. The consistent alignment of the 'Edge' or 'Cliff' has created a strong sense of linearity, further emphasized by ancient transportation routes. The straightness and sharpness of the edge makes up for where the scarp is lower in areas such as Fillingham and Ingham. | *Character:* There is a diverse character with pasture, arable, woodland and hedgerows that create an intricate and textured landscape.<br><br>*Quality:* Areas have a positive landscape character with some elements that could be described as unique such as the views from the distinctive ridge towards the Trent floodplain.<br><br>*Value:* The Scarps and Dipslopes provide a rural landscape that has remained largely intact where the landscape condition is generally good.<br><br>*Capacity:* There are areas of pastoral landscape and wooded scarps interspersed with small stone-built villages and this helps retain a tangible connection to the landscape character, but these features are vulnerable and show less tolerance for change. | The aim should be to manage existing trees and woodland, encouraging new planting to ensure a varied structure, whilst removing invasive species. The restoration of hedgerows and stone walls should be given priority, creating a stronger field pattern and helping to integrate new development into the landscape. The aim is to also bring in opportunities to restore grassland and areas of pasture. In view of the range of geological and geomorphological features, such as the limestone villages, it is important that practices are in place for their care, maintenance and management, and the promotion of their educational and interpretational interest.<br><br>Airfields are also a key feature, and the aim should be to ensure that any new development follows the footprint of existing structures as closely as possible, limiting visual intrusion and the loss of surrounding landscape features. The declining hedgerows and stone boundaries impart a denudation of character in some areas. |
| Medium | Medium to High | **Medium to High** | **Not Applicable** |

| Landscape Receptor – Regional Scale Landscape Character – 4b: Wooded Vales (Cottam 2) |
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**Receptor Baseline:**

Within the Cottam 2 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4b Wooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Wooded Vales does not extend into the 2km Study Area, and only occupies the western most extent of the 5km Study Area as it shares a boundary with the settlement of Gainsborough.

**Key Features:**

The landscape character type sits to the east of Gainsborough, avoiding any 'Built Up Areas' and extends south, following Gainsborough Road towards Gate Burton. The Wooded Vales includes woodlands such as Wharton Wood, Birch Wood, Thonock Grove, White's Wood, Warren Wood, Lea Wood, Bass Wood and Thurly Wood.

The main settlement of Gainsborough is located just within the 5km Study Area at the eastern edge. Other settlements include Blyton, Pilham, Corringham, Blyborough, Willoughton, Hemswell, Harpswell, Springthorpe and Heapham. The main highway corridors include the A631 (Corringham Road leading to Harpswell Lane), B1398 (Middle Street) and the A159 (Thonock Road).

Wooded Vales carries itself south from Gainsborough to include the strong woodland that defines the landscape to the east of the settlements of Knaith and Lea. Some of the woodlands and parks within this Landscape Character type include Burton Wood, Park Plantation, Knaith Park, Thurlby Wood, Bass Wood, Willoughton Wood and Birch Wood. Key characteristics of the Wooded Vales Landscape Character Type is that it is a gently undulating landform formed over soft mudstone and clay geology, sharing many characteristics with the wider Unwooded Vales. Within this landscape character type there is a relatively high level of woodland cover, with notable tracts of ancient semi-natural woodland along outer fringes of parishes and large coniferous plantations.

Numerous watercourses flow through the area within shallow undulations often flanked by pasture and riparian habitat, particularly around Springthorpe and Heapham. This Landscape Character type is also sparsely settled with small villages and dispersed farms linked by quiet rural winding lanes often flanked by tall hedgerows and tree belts. Woodlands are localized variations in the landform, where they shorten views and obstruct wide panoramas to create a more intimate scale landscape than what is experienced within the Unwooded Vales Landscape Character Type.

Key characteristics of the Wooded Vales also include gently undulating landform which has been formed over soft mudstone and clay geology, sharing many characteristics with the wider Unwooded Vales Landscape Character Type. Low hills and ridges gain visual prominence within this landscape as the elevated landform fringing the vales gives a broad sense of containment. Numerous watercourses flow within the shallow undulations which are often flanked by pasture and riparian habitats. There is a relatively high levels of woodland cover, with notable tracts of ancient semi-natural woodland along the outer fringes of parishes and large coniferous plantations. The landscape character is sparsely settled with small villages and dispersed farms linked by quiet rural winding lanes often flanked by tall hedgerows and tree belts.

The sparsely settled Wooded Vales Landscape Character Type generally occurs in north Lincolnshire and lies within the much broader and extensive Unwooded Vales.

**Character Context:**

Cottam 2 is mainly located within RLCT 4a: Unwooded Vales, where the land area is found to the north of the A631 (Corringham Road) in the context of the settlements of Pilham, Corringham and Springthorpe. To the east of Cottam 2, RLCT 6a: Limestone Scarps and Dipslopes shares the outer 2km Study Area where it extends into the 5km Study Area. The ridgeline (further to the east) then gives strong containment to RLCT 4a, where the settlements of Wilhoughton, Hemswell and Harpswell mark the boundary with the B1398.

RLCT 4b: Wooded Vales landscape character type is found to the west of the Cottam 2 Site/Sites on the outer bounds of the 5km study area and outside of the 2km study area.

RLCT 4b is not considered to form part of the immediate landscape context for the Cottam 2 Site/Sites since the character type is located to the west of the settlement of Corringham and the large woodland blocks that stand to the east of Gainsborough are substantial features that provide separation in the landscape.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Mitigation (Operation Magnitude of Change at Year 15) |
|---|---|---|---|
| In terms of forces for change, the Wooded Vales aims to promote new woodland planting as this is a significant component of the landscape. The aim should be to also protect the distinctive character of the settlements and consider the visual impact of any new development. The restoration of hedgerows should also be given priority to strengthen the field pattern and enhance linkages between woodlands. The impact on the setting of village churches is also particularly important as these are distinctive local landmarks. There are regular patterns of enclosure and modern arable fields where hedgerows have been removed, but due to the abundance of large woodland blocks this helps reinforce a sense of enclosure.<br><br>**Overall,** the susceptibility of the Wooded Vales is conditioned by a number of key forces for change that have the potential to shape the future of the landscape. These include the agricultural intensification and farm amalgamation that is resulting in the loss or damage of many typical landscape features, including traditional patterns of field boundaries, remnants of ridge and furrow, and grasslands. The loss of grazing fields around the edges of villages that is leading to a more homogenous landscape.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Wooded Vales appeal to the visual senses where extensive panoramas are possible, often framed by larger areas of woodland. There are areas where rising landform allows opportunity for extensive views that uninterrupted by existing vegetation such as areas to the southeast of Gainsborough within the landscape around Springthorpe.<br><br>*Cultural:* The landscape shows evidence of small villages, hamlets and farms that are evenly distributed across the landscape. This includes settlement of Yawthorpe and outlying farmsteads at Thonock Grove and Wharton Wood which fall within the Area of Greater Landscape Value (AGLV).<br><br>*Natural:* There are large areas of ancient and species-rich native woodland juxtaposed with regular blocks of coniferous plantations, particularly to the northeast of Gainsborough within the AGLV. Sizable areas of ancient wet woodlands are also notable along several watercourses. Many wet woodland sites are characterised by native broadleaved species.<br><br>*Recreation and Enjoyment:* The Wooded Vales are valued for recreation which often focuses on the PRoW network that follows the route of the River Trent and almost runs parallel. The impact on the setting of village churches is also particularly important as these are distinctive local landmarks.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' endorsed by the strong agricultural character, with wide areas retaining a sense of rural tranquility and intactness, notably where ancient hedgerow patterns, woodlands and winding rural lanes are a prominent characteristic.<br><br>*Health and Wellbeing:* The Wooded Vales provide a very limited network of PRoW meaning that the river floodplain is the main focus for recreation.<br><br>*Important Spatial Function:* The landscape benefits from the woods and heaths that occupy the boundaries of the vale's parishes, and many village place names also provide some evidence with several woodlands being named after a local village such as Burton Wood and Lea Wood, indicating they once belonged to a particular community.<br><br>**Overall,** the value of the Wooded Vales is shaped by the distinctive character of the settlements and their churches which are local landmarks. The landscape possesses areas of ancient and species-rich native woodland, including wet woodland. However, in recent decades, agricultural intensification and farm amalgamation is leading to a more homogenous landscape. | *Character:* Extensive panoramas are possible, often framed by larger areas of woodland and there would be generally a lower landscape tolerance or scope for landscape change in these areas.<br><br>*Quality:* The strong presence of woodland is characteristic of this landscape and the large areas with regular blocks of plantations could be readily replicated.<br><br>*Value:* The Wooded Vales are valued for recreation which often focuses on the PRoW network that follows the route of the River Trent and almost runs parallel.<br><br>*Capacity:* The strong agricultural character, with wide areas retaining a sense of rural tranquility and intactness, notably where ancient hedgerow patterns, woodlands and winding rural lanes are a prominent characteristic, but vulnerable to change. | The aim should be to plan new woodlands in the most suitable locations. This may include in and around settlements, where woodland would help integrate new development into the landscape and in more intimate low-lying areas, where woodland would help create a mixed pattern of land use. Consideration should also be given to the management of existing trees and woodland, enhancing biodiversity value and age structure through new planting and the creation of woodland edge habitats. An increase in grassland reversion should also be encouraged, increasing the occurrence of semi-natural habitats.<br><br>The restoration of hedgerows should also be given priority to strengthen the field pattern and enhance linkages between woodlands. |
| Medium | Medium to High | **Medium to High** | **Not Applicable** |

| Landscape Receptor – Regional Scale Landscape Character – 6a: Limestone Scarps and Dipslopes (Cottam 2) |
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**Receptor Baseline:**

Within the Cottam 2 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 6a Limestone Scarps and Dipslopes, which is shown on **Figure 8.5 [C6.4.8.5]**. Limestone Scarps and Dipslopes only occupies the eastern most edge of the 5km Study Area where it shares a boundary with RLCT Profile: 4a Unwooded Vales. The Limestone Scarps and Dipslopes Landscape Character Type is part of the Jurassic Limestone belt that runs from Dorset to the Humber.

**Key Features:**

This landscape character area borders Grayingham and spans the landscape north to south to each side of Ermine Street covering the settlements of Blyborough, Hemswell Cliff, Waddingham, Snitterby, Bishop Norton, Glentham, Hackthorn and Brattleby.

This regional landscape character area exhibits a strong diverse pattern of land use and regular spring line settlements along the scarp in contrast to the more open and exposed dip slope. Ermine Street forms a significant feature and continues to dictate landscape patterns and boundaries. Streams are relatively insubstantial and occupy gentle folds in the underlying landscape. These streams are the focus of settlements such as Willhoughton and Hemswell.

Limestone villages within this regional landscape character type retain strong historic character and provide a defined link to the nature of the underlying geology. The differences in soils and landform have a significant influence on land cover. The steeper scarp slopes are predominantly pastoral with intermittent woodlands, and this is a particular feature at Hemswell and Harpswell. In contrast, where the scarp slope is noticeably gentler where arable fields can be observed to roll over the crest of the edge and down into the adjacent vale. This is a gentle arable characteristic and is most noticeable in the landscape between Willhoughton and Hemswell. Intensive agricultural land uses have diminished the extent of semi-natural habitat across the landscape along with the low and generally poor quality of hedgerows. The limestone villages are a key feature of the landscape, particularly Pilham and Corringham and the small hamlet of Yawthorpe. Some small remnant species-rich grasslands and woodlands are locally significant, particularly when associated with parklands. Such parkland landscapes are common around Blyton and Blyborough.

Key characteristics of the Limestone Scarps and Dipslopes include the limestone escarpment and dip-slope with a strong north south alignment. Limestone villages retain a strong historic character and provide a good link to the nature of the underlying geology. Ermine Street forms a significant feature of the landscape and continues to dictate landscape patterns and boundaries. Place names and some indicator species are reminders of once widespread heathland and evidence of declining landscape condition across intensively farmed areas.

The Limestones Scarps and Dipslopes Character Type is part of the Jurassic limestone belt that runs from Dorset to the Humber. It is thought that the landscape has remained largely devoid of trees since the prehistoric period.

**Character Context:**

Cottam 2 is mainly located within RLCT 4a: Unwooded Vales, where the land area is found to the north of the A631 (Corringham Road) in the context of the settlements of Pilham, Corringham and Springthorpe. To the east of Cottam 2, RLCT 6a: Limestone Scarps and Dipslopes shares the outer 2km Study Area where it extends into the 5km Study Area. The ridgeline (further to the east) then gives strong containment (to RLCT 4a) where the settlements of Wilhoughton, Hemswell and Harpswell mark the boundary with the B1398.

RLCT 6a: Limestone Scarps and Dipslopes landscape character type is found to the east of the Cottam 2 Site/Sites on the outer bounds of the 5km Study Area.

RLCT 6a is considered to form part of the immediate landscape context for the Cottam 2 Site/Sites since the character type is in the context of the settlements of Willhoughton, Hemswell and Harpswell where the landform rises towards the ridgeline and where there may be few elements of separation within the landscape.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Mitigation (Operation Magnitude of Change at Year 15) |
|---|---|---|---|
| In terms of forces for change, the Limestone Scarps and Dipslopes aims to plan for new woodlands, ensuring new planting schemes take full advantage of opportunities to enhance the scarp slope. The aims should also be to ensure there is consideration of the relationship between Limestone Scarps and Dipslopes and Unwooded Vales to ensure new planting does not negatively impact upon the open character of the adjoining Landscape Character Type. The pressures are centered around existing woodlands that are often small and isolated and suffer from lack of management. The high demand for aggregates, and pressure for new and expanded quarries, is likely to further damage the landscape. Pressure from arable cultivation has resulted in field enlargement, removing boundaries and creating a more open landscape. Roman roads are a key feature, but they are under threat from lack of management and inappropriate planting.<br><br>**Overall,** the susceptibility of the Limestone Scarps and Dipslopes is conditioned by the escarpment, known locally as the Lincolnshire Edge or Cliff, that rises above the Trent Vale and forms a prominent and distinctive landscape feature. The Roman roads are also a key consideration created to link London with York. Superimposed on the north south axis of the Roman road is a less dominant but nonetheless distinctive pattern of east west routes and field boundaries that add geometric character. The relevant characteristics of the landscape therefore have a moderate ability to accommodate change without undue adverse effects.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Limestone Scarps and Dipslopes appeal to the visual senses where woodland along the scarp slope is a significant feature, defining the ridgeline and helping to contain settlement. Views towards Lincoln Cathedral are part of key views across the area.<br><br>*Cultural:* The landscape shows evidence of Roman roads and network of enclosure roads that are distinctive features of the Limestone Scarps and Dipslopes. The course of Ermine Street is an important asset. Airfields are also a feature providing a link with the wartime past and a focal point for change.<br><br>*Natural:* There is a diverse character with pasture, arable, woodland and hedgerows that create an intricate and textured landscape. In some places, the water table is close to the surface, resulting in several streams emerging close to the top of the scarp and flowing eastwards.<br><br>*Recreation and Enjoyment:* The Scarps and Dipslopes are valued for recreation which often focuses on the locations where the crests of ridges allow views across the area, in particular towards Lincoln Cathedral. The course of Ermine Street is a recreation and habitat corridor, which contributes to biodiversity and landscape character.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' with a subtle regimented character that is reinforced by the geometric patterns of fields. The transport routes and regularity of the scarp edge villages also exert a strong geometry.<br><br>*Health and Wellbeing:* The Scarps and Dipslopes provide a rural landscape that has remained largely intact where the landscape condition is generally good. There are areas of pastoral landscape and wooded scarps interspersed with small stone-built villages and this helps retain a tangible connection to landscape character.<br><br>*Important Spatial Function:* The landscape benefits from its low elevation, and the views from these lowlands towards the elevated areas, which act as a strong backdrop.<br><br>**Overall,** the value of the Limestone Scarps and Dipslopes is shaped by the pressure from arable cultivation where field enlargement is removing boundaries and creating a more open landscape. The consistent alignment of the escarpment has created a strong sense of linearity, further emphasized by ancient transportation routes. | *Character:* There would be a medium landscape tolerance or some scope for landscape change. Airfields are also a feature providing a link with the wartime past and a focal point for change.<br><br>*Quality:* The pressures are centered around existing woodlands that are often small and isolated and suffer from lack of management.<br><br>*Value:* Pressure from arable cultivation has resulted in field enlargement, removing boundaries and creating a more open landscape that has caused alteration/degradation/ or erosion of some features.<br><br>*Capacity:* The landscape benefits from its low elevation, and the views from these lowlands towards the elevated areas, which act as a strong backdrop, and this affects the tolerance of the landscape to change. | The aim should be to manage existing trees and woodland, encouraging new planting to ensure a varied structure, whilst removing invasive species. The restoration of hedgerows and stone walls should be given priority, creating a stronger field pattern and helping to integrate new development into the landscape. The aim is also to also bring opportunities to restore grassland and areas of pasture. In view of the range of geological and geomorphological features, such as the limestone villages, it is important that practices are in place for their care, maintenance and management, and the promotion of their educational and interpretational interest.<br><br>Airfields are also a key feature, and the aim should be to ensure that any new development follows the footprint of existing structures as closely as possible, limiting visual intrusion and the loss of surrounding landscape features. The declining hedgerows and stone boundaries impart a denudation of character in some areas. |
| Medium | Medium | **Medium** | **Not Applicable** |

| Landscape Receptor – Regional Scale Landscape Character – 2b: Planned and Drained Fens and Carrlands (Cottam 3a) |
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**Receptor Baseline:**

Within the Cottam 3a Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 2b Planned and Drained Fens and Carrlands, which is shown on **Figure 8.5 [C6.4.8.5]**. Planned and Drained Fens is located outside the 2km Study Area, and only occupies the western most edge of the 5km Study Area where it shares a boundary with RLCT: 4a Unwooded Vales and RLCT Profile: 4b Wooded Vales. The Planned and Drained Fens and Carrlands landscape character type is part of a belt of consistently low-lying terrain that mostly occurs within the eastern part of the East Midlands Region.

There are areas defined as 'Built Up Area' that extend eastwards from Gainsborough towards Blyton and Corringham following the main transport routes of the A59 (Thonock Road) and A631 (Corringham Road), respectively, but they are located outside the 5km Study Area. The settlements of Morton, East Stockwith, West Stockwith and East Ferry are located close to the 5km Study Area boundary with RLCT Profile 2b: Planned and Drained Fens and Carrlands but at the outer edge.

**Key Features:**

This is the area of land located to the west of Laughton Woods and extending (towards the west) as far as the River Trent at Mean High Water. The river Trent, at this location, follows a sinuous alignment that extends from the western edge of Gainsborough towards Scunthorpe in the north. There is no main settlement within this landscape character type, that forms part of the Study Area, other than isolated residential dwellings and farmsteads, and the main settlement of Gainsborough is located just outside the 5km Study Area at the southwestern edge. Other settlement further east of this area include Scotter, Scotton and Blyton, which are located within or served by the A159 (Thonock Road). Within the remainder of the landscape character type, there is a limited road network, where connections mainly comprise of minor tracks leading in an east to west direction connecting dwellings and farmsteads. Planned and Drained Fens and Carrlands landscape character type has a simple palette of land uses and landscape features which gives visual unity and a strong sense of identity. The area is typified by large scale and open flat farmlands with extensive and uninterrupted vistas to distant horizons beneath vast skies. There are a significant number of areas within this landscape character type that are at or below sea level, with modestly elevated areas acting as the focus of settlement. There are rich and varied arable land uses, root crops, bulbs, vegetables and horticultural glass houses that give the landscape a highly productive character and seasonal variations in colour and texture. There is also a strong sense of remoteness due to the expansive and sparsely settled areas although there are periods of intense activity during harvest. The land within this landscape character type is highly productive and is particularly well suited to intensive modern arable agriculture.

**Character Context:**

Cottam 3a is mainly located within RLCT 4a: Unwooded Vales landscape character type, where the land area is found to the north of Kirton Road B1205 (and mainline railway) and to the north of the settlement of Pilham and northeast of the settlement of Blyton where it forms the boundary with the adjoining RLCT 4b: Wooded Vales. To the east of Cottam 3a, the settlement of Northorpe forms part of a wider collection of other scattered farmsteads across this landscape character type. The ridgeline (further to the east) then gives strong containment where the settlements of Kirton in Lindsey, Grayingham, Blyborough and Willhoughton mark the boundary with the B1398.

RLCT 2b: Planned and Drained Fens and Carrlands landscape character type is found to the west of the Cottam 3a Site/Sites within the 5km study area and outside of the 2km study area.

RLCT 2b is not considered to form part of the immediate landscape context for the Cottam 3a Site/Sites, since the character type is located to the west of the settlements of Blyton and Laughton (and beyond RLCT 4b: Wooded Vales) and then extends as far east as the Mean High Water with the River Trent.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Mitigation (Operation Magnitude of Change at Year 15) |
|---|---|---|---|
| In terms of forces for change, the Planned and Drained Fens and Carrlands aims to manage the diversification of farms which look to provide attractions and accommodation. Farm amalgamation and agricultural intensification should also be carefully managed to maintain rural character. Due to the flat, featureless topography of the area, specifically lack of hedgerows, the implications of agricultural intensification are evident. Improvements to dykes and embankments as a result of intensive agriculture are also a key force for change. Fast growing energy crops are also creating an impact on the landscape.<br><br>**Overall,** the susceptibility of the Planned and Drained Fens and Carrlands is conditioned by woodland cover, which is generally sparse. Unless carefully sited, new planting can introduce inappropriate and visually intrusive elements in the flat and open landscape. The proliferation of new large scale agricultural buildings and general increase in farm size can introduce visual intrusions and may be difficult to mitigate due to the sparse woodland cover and conditions over planting.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Planned and Drained Fens and Carrlands appeal to the visual senses since due to absence of settlement and activity there is a remote, tranquil character.<br><br>*Cultural:* The landscape shows evidence of generally little settlement, with only isolated farmsteads and single dwellings. The prevalent use brick in the farmsteads adds visual unity to the landscape in the context of the winding course of the river Trent.<br><br>*Natural:* There are extensive expanses of agricultural landscape, which are carefully managed, resulting in very few areas of semi natural habitat. Where present, areas of scrub, semi natural woodland and reedbed gain added significance.<br><br>*Recreation and Enjoyment:* The Planned and Drained Fens and Carrlands are valued for their strong local identity due to the arable land use and tranquil character. At times of the year during harvest seasonal laborers can reduce the tranquil character.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a limited 'sense of place' due to its productive and utilitarian character, however the flat featureless landscape creates expansive views across wide areas along the course of the river Trent.<br><br>*Health and Wellbeing:* The Planned and Drained Fens and Carrlands provide limited areas for recreation due to the distinct lack of public rights of way (PRoW).<br><br>*Important Spatial Function:* The landscape benefits from the high level of visual unity from the level landform, extensive arable land use and sparse settlement to interrupt the skyline.<br><br>**Overall,** the value of the Planned and Drained Fens and Carrlands is shaped by its drained and settled past that is overlain with a geometric modern landscape of later parliamentary inclosure. There is some time depth associated with old drove roads that often lead away from the river Trent in an easterly direction towards Scotter, Scotton and Laughton, otherwise the landscape presents a simple palette of land uses and features. | *Character:* Due to absence of settlement and activity there is a remote, tranquil character, but this is not unique or a nationally scarce feature.<br><br>*Quality:* There are extensive expanses of agricultural landscape, which are carefully managed, resulting in very few areas of semi natural habitat.<br><br>*Value:* Areas that have positive landscape character benefit from the high level of visual unity from the level landform, extensive arable land use and sparse settlement to interrupt the skyline, but this has less tolerance for landscape change.<br><br>*Capacity:* There is some time depth associated with old drove roads that often lead away from the river Trent in an easterly direction towards Scotter, Scotton and Laughton, otherwise the landscape presents a simple palette of land uses and features that have some capacity for change. | The aims for the Planned and Drained Fens and Carrlands should be to adapt agricultural land management practices to accommodate the projected effects of sea level rise as a consequence of climate change. The distinctive open character of the landscape is also an important consideration when planning mitigation. The type and location of new woodland and tree planting is a key consideration. Although very limited native tree planting may be appropriate, priority should be given to managing more characteristic habitats, such as dykes and drainage ditches, and the planting of natural vegetation in these locations. |
| Medium | Medium to Low | **Medium to Low** | **Not Applicable** |

| Landscape Receptor – Regional Scale Landscape Character – 4b: Wooded Vales (Cottam 3b) |
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| **Receptor Baseline:**<br><br>Within the Cottam 3b Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4b Wooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Wooded Vales does not extend into the 2km Study Area, and only occupies the western most extent of the 5km Study Area. At the eastern most edge of RLCT 4a, the boundary is shared with RLCT Profile: 6a Limestone Scarps and Dipslopes.<br><br>**Key Features:**<br><br>This is the land area that sits to the south of the mainline railway and to the east of Pilham Lane. This landscape character type is located to the west of the settlement of Blyton and extends north towards Laughton Woods. The woodlands form part of the Laughton Area of Greater Landscape Value (AGLV) and occupy the western and northern extent of landscape character type. The woodlands to the east are bisected by the A159 that links Scotter with Blyton and to the west, Laughton Woods is bordered by the secondary road network that heads north from Morton through this area. To the center of Laughton Woods is Scotton Common with Hardwick Hill located to the west of the common where it rises to 30m AOD. Laughton Woods also includes a number of waterbodies including Green Howes Pond and Jerry's Bog and these are associated with a number of Sites of Special Scientific Interest (SSSI). With Cottam 3b, the majority of the land sits within Unwooded Vales. Wooded Vales then sit to the west and northwest of Cottam 3b and extend into the 5km Study Area. The RLCT 4b landscape character type consists of gently undulating landform formed over soft mudstone and clay geology, sharing many characteristics with the wider Unwooded Vales. There are deposits of superficial geology, particularly cover sands and till that influences local land use and semi-natural habitat cover. Low hills and ridges gain visual prominence as elevated landform to give a broad sense of containment, and these include areas of higher ground at Hardwick Hill and the landscape to the southwest of Scotter. There are numerous watercourses that flow within shallow undulations often flanked by pasture and riparian habitat, but many of them are formalized land drains with a geometric pattern. There is a higher concentration of land drains to the southern part of the area between Blyton and East Stockwith. There is a relatively high woodland cover within this landscape character type with notable tracts of ancient semi-natural woodland. There are notable areas of woodland at Owlet Plantation, to the east of East Stockwith and associated with Laughton Common and Scotton Common. This landscape character type is sparsely settled with dispersed farms linked by quiet rural lanes and tracks often flanked by tall hedgerows and tree belts. Most of the tracks have a strong east to west alignment that are possibly former drove roads leading to the Mean High Water and River Trent.<br><br>**Character Context:**<br><br>Cottam 3b is mainly located within RLCT 4a: Unwooded Vales, where the land area is found to the south of the B1205 (Kirton Road) and mainline railway, and in the context of the settlements of Pilham, Corringham and Springthorpe. To the east of Cottam 3b, the landscape character type RLCT 6a: Limestone Scarps and Dipslopes shares the outer 5km Study Area (with RLCT 4a). The ridgeline (to the east) then gives strong containment where the settlements of Kirton in Lindsey, Grayingham, Blyborough and Willhoughton mark the boundary with the B1398.<br><br>RLCT 4b: Wooded Vales landscape character type is found to the west and NW of the Cottam 3b Site/Sites on the boundary of the 2km Study Area and the 5km Study Area.<br><br>RLCT 4b is not considered to form part of the immediate landscape context for the Cottam 3b Site/Sites since the character type is located to the west of the settlement of Blyton where the intervening-built form, mainline railway, woodlands and arable land use provide strong element of separation within the landscape. |

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Mitigation (Operation Magnitude of Change at Year 15) |
|---|---|---|---|
| In terms of forces for change, the Wooded Vales aims to promote new woodland planting as this is a significant component of the landscape. The aim should be to also protect the distinctive character of the settlements and consider the visual impact of any new development. The restoration of hedgerows should also be given priority to strengthen the field pattern and enhance linkages between woodlands. The impact on the setting of village churches is also particularly important as these are distinctive local landmarks. There are regular patterns of enclosure and modern arable fields where hedgerows have been removed, but due to the abundance of large woodland blocks this helps reinforce a sense of enclosure.<br><br>**Overall,** the susceptibility of the Wooded Vales is conditioned by several key forces for change that have the potential to shape the future of the landscape. These include the agricultural intensification and farm amalgamation that is resulting in the loss or damage of many typical landscape features, including traditional patterns of field boundaries, remnants of ridge and furrow, and grasslands. The loss of grazing fields around the edges of villages that is leading to a more homogenous landscape.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Wooded Vales appeal to the visual senses where extensive panoramas are possible, often framed by larger areas of woodland. There are areas where rising landform allows opportunity for extensive views that uninterrupted by existing vegetation such as areas at the edges of Laughton and Blyton.<br><br>*Cultural:* The landscape shows evidence of small villages, hamlets and farms that are evenly distributed across the landscape. This includes settlement Blyton and Laughton. Laughton falls within the Laughton Area of Greater Landscape Value (AGLV) and supports a number of cultural assets including the Grade II Listed Laughton Hall Farmhouse and Grade I Listed Church of All Saints.<br><br>*Natural:* There are large areas of ancient and species-rich native woodland juxtaposed with regular blocks of coniferous plantations, particularly within the AGLV. Sizable areas of ancient wet woodland are also notable along several watercourses. Many wet woodland sites are characterized by native broadleaved species.<br><br>*Recreation and Enjoyment:* The Wooded Vales are valued for recreation which often focuses on the woodland trail network that is focused on Laughton Woods and which attracts visitors from nearby Gainsborough and Scunthorpe.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' endorsed by the woodland character, with wide areas retaining a sense of rural tranquility and intactness, notably where woodlands and associated tracks and trails are a prominent characteristic.<br><br>*Health and Wellbeing:* The Wooded Vales provide a very limited network of PRoW, meaning that the Laughton Woods area is the main focus for recreation.<br><br>*Important Spatial Function:* The landscape benefits from the woodlands associated with Laughton Woods and outlying areas, including Blyton Carr, Owlet Plantation, Carmer Wood and Peacock Wood,<br><br>**Overall,** the value of the Wooded Vales is shaped by the rising landform that allows opportunity for extensive views from the edges of Laughton and Blyton. The landscape possesses a strong framework of woodland cover with gently undulating landform. The rural and historic character prevails, although coniferous plantations and modern arable fields diminish the sense of antiquity in some parts. | *Character:* The character is positive and defined by wooded areas where extensive panoramas are possible. The gently undulating landform, although commonplace, adds to the local distinctiveness.<br><br>*Quality:* The agricultural intensification and farm amalgamation that is resulting in the loss or damage of many typical landscape features, including traditional patterns of field boundaries.<br><br>*Value:* The Wooded Vales are valued for recreation which often focuses on the woodland trail network that is focused on Laughton Woods and which attracts visitors from nearby Gainsborough and Scunthorpe.<br><br>*Capacity:* The presence of mature woodland brings a sense of place and a strong framework in parts of the area to mitigate against landscape change. | The aim should be to plan new woodland in the most suitable locations. This may include in and around settlements, where woodland would help integrate new development into the landscape and in more intimate low-lying areas, where woodland would help create a mixed pattern of land use. Consideration should also be given to the management of existing trees and woodland, enhancing biodiversity value and age structure through new planting and the creation of woodland edge habitats. An increase in grassland reversion should also be encouraged, increasing the occurrence of semi-natural habitats. |
| Medium | Medium to High | **Medium to High** | **Not Applicable** |

| Landscape Receptor – Regional Scale Landscape Character – 2b: Planned and Drained Fens and Carrlands (Cottam 3b) |
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**Receptor Baseline:**

Within the Cottam 3b Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 2b Planned and Drained Fens and Carrlands, which is shown on **Figure 8.5 [C6.4.8.5]**. Planned and Drained Fens and Carrlands is located outside the 2km Study Area, and only occupies the SW most edge of the 5km Study Area where it shares a boundary with RLCT: 4a Unwooded Vales and RLCT Profile: 4b Wooded Vales. The Planned and Drained Fens and Carrlands landscape character type is part of a belt of consistently low-lying terrain that mostly occurs within the eastern part of the East Midlands Region.

There are areas defined as 'Built Up Area' that extend eastwards from Gainsborough towards Blyton and Corringham following the main transport routes of the A59 (Thonock Road) and A631 (Corringham Road), respectively, but they are located outside the 5km Study Area. The settlements of Morton, East Stockwith, West Stockwith and East Ferry are located close to the 5km Study Area boundary with RLCT Profile 2b: Planned and Drained Fens and Carrlands but at the outer edge.

**Key Features:**

This is the area of land located to the west of Laughton Woods and extending (towards the west) as far as the River Trent at Mean High Water. The River Trent, at this location, follows a sinuous alignment that extends from the western edge of Gainsborough towards Scunthorpe in the north. There is no main settlement within this landscape character type, that forms part of the Study Area, other than isolated residential dwellings and farmsteads, and the main settlement of Gainsborough is located just outside the 5km Study Area at the southwestern edge. Other settlement further east of this area include Scotter, Scotton and Blyton, which are located within or served by the A159 (Thonock Road). Within the remainder of the landscape character type, there is a limited road network, where connections mainly comprise of minor tracks leading in an east to west direction connecting dwellings and farmsteads. Planned and Drained Fens and Carrlands landscape character type has a simple palette of land uses and landscape features which gives visual unity and a strong sense of identity. The area is typified by large scale and open flat farmlands with extensive and uninterrupted vistas to distant horizons beneath vast skies. There are a significant number of areas within this landscape character type that are at or below sea level, with modestly elevated areas acting as the focus of settlement. There are rich and varied arable land uses, root crops, bulbs, vegetables and horticultural glass houses that give the landscape a highly productive character and seasonal variations in colour and texture. There is also a strong sense of remoteness due to the expansive and sparsely settled areas although there are periods of intense activity during harvest. The land within this landscape character type is highly productive and is particularly well suited to intensive modern arable agriculture.

**Character Context:**

Cottam 3b is mainly located within RLCT 4a: Unwooded Vales, where the land area is found to the south of Kirton Road B1205 (and mainline railway) and to the NE of the settlement of Pilham and SE of Blyton where the landscape character type forms the boundary with the adjoining RLCT 4b: Wooded Vales. To the east of Cottam 3b, the Medieval village of Southorpe, Southorpe Farm and Bonsdale Farm contribute to the settlement pattern and form part of a wider collection of scattered farmsteads across this landscape character type. The ridgeline (further to the east) then gives strong containment where the settlements of Grayingham, Blyborough and Willhoughton mark the boundary with the B1398.

RLCT 2b: Planned and Drained Fens and Carrlands landscape character type is found to the north and west of the Cottam 3b Site/Sites within the 5km study area but outside of the 2km study area.

RLCT 2b is not considered to form part of the immediate landscape context for the Cottam 3b Site/Sites, since the character type is located to the west of Blyton and Laughton (beyond RLCT 4b: Wooded Vales) and then extends as far east as the Mean High Water with the River Trent.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Mitigation (Operation Magnitude of Change at Year 15) |
|---|---|---|---|
| In terms of forces for change, the Planned and Drained Fens and Carrlands aims to manage the diversification of farms which look to provide attractions, accommodation, and Farm amalgamation. Agricultural intensification should also be carefully managed to maintain rural character. Due to the flat, featureless topography of the area, specifically lack of hedgerows, the implications of agricultural intensification are evident. Improvements to dykes and embankments as a result of intensive agriculture are also a key force for change. Fast growing energy crops are also creating an impact on the landscape.<br><br>**Overall,** the susceptibility of the Planned and Drained Fens and Carrlands is conditioned by that woodland cover, which is generally sparse. Unless carefully sited, new planting can introduce inappropriate and visually intrusive elements in the flat and open landscape. The proliferation of new large scale agricultural buildings and general increase in farm size can introduce visual intrusions and may be difficult to mitigate due to the sparse woodland cover and conditions over planting.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Planned and Drained Fens and Carrlands appeal to the visual senses since due to absence of settlement and activity there is a remote, tranquil character.<br><br>*Cultural:* The landscape shows evidence of generally little settlement, with only isolated farmsteads and single dwellings. The prevalent use brick in the farmsteads adds visual unity to the landscape in the context of the winding course of the River Trent. There are a significant number of areas within this landscape character that are at or below sea level, with modestly elevated areas acting as the focus of settlement.<br><br>*Natural:* There are extensive expanses of agricultural landscape, which are carefully managed, resulting in very few areas of semi natural habitat. Where present, areas of scrub, semi natural woodland and reedbed gain added significance.<br><br>*Recreation and Enjoyment:* The Planned and Drained Fens and Carrlands are valued for their strong local identity due to the arable land use and tranquil character. At times of the year during harvest seasonal labourers can reduce the tranquil character.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a limited 'sense of place' due to its productive and utilitarian character, however the flat featureless landscape creates expansive views across wide areas along the course of the River Trent.<br><br>*Health and Wellbeing:* The Planned and Drained Fens and Carrlands provide limited areas for recreation due to the distinct lack of public rights of way (PRoW).<br><br>*Important Spatial Function:* The landscape benefits from the high level of visual unity from the level landform, extensive arable land use and sparse settlement to interrupt the skyline.<br><br>**Overall,** the value of the Planned and Drained Fens and Carrlands is shaped by the visual unity to the landscape that is typified by a geometric modern pattern of parliamentary enclosure. The topography is also flat and featureless and agricultural intensification, with fast growing energy crops, is changing the landscape. | *Character:* The distinctive open character of the landscape is important.<br><br>*Quality:* The landscape is shaped by agricultural intensification, which adds a productive and utilitarian character with a limited sense of place.<br><br>*Value:* The landscape benefits from the high level of visual unity from the level landform, extensive arable land use and sparse settlement to interrupt the skyline.<br><br>*Capacity:* The flat featureless landscape creates expansive views across wide areas and although not described as unique, these perceptual/aesthetic aspects have some vulnerability to unsympathetic development. | The aims for the Planned and Drained Fens and Carrlands should be to adapt agricultural land management practices to accommodate the projected effects of sea level rise as a consequence of climate change. The distinctive open character of the landscape is also an important consideration when planning mitigation. The type and location of new woodland and tree planting is a key consideration. Although very limited native tree planting may be appropriate, priority should be given to managing more characteristic habitats, such as dykes and drainage ditches, and the planting of natural vegetation in these locations. |
| Medium | Medium to Low | **Medium to Low** | **Not Applicable** |

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 1 Site/Sites) |
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| **Receptor Baseline:**<br><br>Within the Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends across the majority of the 2km and 5km Study Area apart from the eastern most edge where it shares a boundary with RLCT Profile: 6a Limestone Scarps and Dipslopes. The western extent of the 5km Study Area is also host to a small part of RLCT Profile 3a: Floodplain Valleys and RLCT Profile: 4b Wooded Vales.<br><br>The Sites within Cottam 1 Site/Sites can be sub-divided into two distinct land areas:<br>• Cottam 1 North<br>• Cottam 1 South<br><br>**Key Features:**<br><br>Cottam 1 North Site:<br>This refers to the area located to the north of Ingham Road and to the west of this area there are the settlements of Kexby, Willingham by Stow, Normanby by Stow and Stow, which are located to each side of the B1241 (Sturton Road and Stow Road). To the centre of this area is the small hamlet of Coates and to the east there are the settlements of Fillingham and Ingham, which are located to each side of the B1398. The area is bisected by a secondary road, known as Fillingham Lane which then runs into Willingham Road, and which links the settlements of Willingham by Stow to Fillingham. The landscape mainly comprises productive arable and pastoral farmland, but there are areas of cereal and vegetable cropping to the east of Willingham by Stow around Stone Pit Lane where hedgerow removal has created some very large fields under single crop. Most of the Unwooded Vales retain a deeply rural and tranquil character, with farms and small nucleated villages located throughout areas of productive farmland, linked by narrow winding lanes and roads. Watercourses are often bordered by a narrow alluvial floodplain that wind through the landscape along shallow valleys, appearing little more than gentle folds in the landscape. This pattern of drainage is particularly evident between the settlement of Coates and Normanby by Stow and Willingham by Stow in the west of the Cottam 1 Site/Sites. This area boasts an extensive network of field drains including tributaries of the River Till that are only discernable by tracing alder and willow trees, rusty pastures, and belts of riparian habitat across the landscape. There are localised concentrations of woodland cover between Coates and Willingham by Stow that include Normanby Gorse and New Plantation, despite the overall tendency for limited woodland cover across the area.<br><br>Cottam 1 South Site:<br>This refers to the area located to the south of Ingham Road and to the west of this area the settlements of Normanby by Stow and Sturton by Stow are located to each side of the B1241 (Sturton Road and Stow Road). To the centre of this area are several isolated residential properties and farmsteads. To the east of this area, the settlements of Cammeringham, Brattleby, Aisthorpe and Scampton are nestled into the foot of the ridgeline. This Landscape Character type offers expansive long-distance views from higher ground at the margin of the Vales that gives a sense of visual containment. Within this landscape character type there is limited woodland cover which is a heavy contrast to Wooded Vales Landscape Character Type that is often seen close to Unwooded Vales. There are however localized concentrations of woodland cover to the northeast of Thorpe le Fallows including Brattleby Thorns, Brattleby Gorse, Beck Spinney, Horse Covert and Poplar Wood. The landscape type hosts sparse small villages and dispersed farms all linked together with rural lanes. Key characteristics of the Unwooded Vales is that they are extensive, low lying rural landscape underlain by Triassic and Jurassic mudstone and clays and widespread superficial deposits that generally give rise to low, gently undulating landform which add to the intimacy of the landscape. Occasionally, these hills and ridges rise out of the Vales such as Thorpe le Fallows, which rises to 10m AOD above the surrounding area. These ridges also mark the watersheds between watercourses since the landscape character type also hosts complex drainage patterns (River Till) of watercourses that flow within the shallow undulations often flanked by pasture and riparian habitats.<br><br>**Character Context:**<br><br>The Cottam 1 Site/Sites is mainly located within RLCT 4a: Unwooded Vales, where the land area is found to the north and south of Ingham Road and in the context of the settlements of Coates, Thorpe in the Fallows, Sturton by Stow, Bransby, Kexby, Willingham by Stow, Normanby by Stow and Stow. To the east of the Cottam 1 Site/Sites, the landscape character type RLCT 6a: Limestone Scarps and Dipslopes shares the outer 2km Study Area (with RLCT 4a) and then extends into the 5km Study Area. The ridgeline (to the east) then gives strong containment where the settlements of Fillingham, Ingham and Cammeringham mark the boundary with the B1398.<br><br>RLCT 4a: Unwooded Vakes landscape character type is main host to the Cottam 1 Site/Sites within the 2km Study Area and the 5km Study Area.<br><br>RLCT 4a is considered to form part of the immediate landscape context for the Cottam 1 Site/Sites. |

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change, the Unwooded Vales aims to protect existing rural landscape features, in particular the restoration of hedgerows since the most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, increase in field size. The loss of pasture is particularly evident around settlements, where grazing animals and smaller field sizes contribute to the setting and structure of several villages. Many of the rural villages have not seen widespread expansion but development pressures continue with the demand for housing, commerce and industry creating visual intrusion and extending the urban fringe. For development associated with the rural villages, specific mechanisms include Village Design Statements, and tree planting around settlement fringes to help integrate new development into the landscape.<br><br>**Overall,** the susceptibility of the Unwooded Vales is conditioned by managing growth, ensuring development is appropriate in terms of type, scale, and location. The flat, open landscape is also a key consideration and whilst the aim is to plan new tree planting around key settlements, woodland does not form a significant component of this landscape, and in considering its open and expansive character, extensive new woodland planting would be generally inappropriate.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Unwooded Vales appeal to the visual senses where the roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossing provide local points of interest and the opportunity to capture views across the landscape to the higher landform fringing the Vales,<br><br>*Cultural:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Thorpe le Fallows and Coates. The landscape surrounding these settlements retain a deeply rural and tranquil character with farms linked by minor lanes and roads. There are Roman roads that pass across the area such as Tillbridge Lane indicating that these low-lying areas provided convenient routes through the hills and wetlands.<br><br>*Natural:* The extensive expanses of semi-natural habitat, rivers and streams are an important landscape feature such as the River Till where the course can be observed by tracing sinuous belts of riparian habit and riverside trees, particularly within the area to the south of Ingham Road. Overall, in such a managed agricultural environment, networks of hedgerows and hedgerow trees gain significance in offering a refuge for birds and insects.<br><br>*Recreation and Enjoyment:* The Unwooded Vales are valued for recreation which often focused on the locations where panoramic views are possible from elevated locations from rising land at the edges of the Vales. Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpse of neighboring elevated are often sufficient to provide a sense of place and add to the recreation and enjoyment of the area. Typically, these locations occur around Thorpe le Fallows and Coates.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' with major landform features flanking the lower lying areas creating broad scale visual containment along the ridgeline to the east at Cammeringham, Ingham and Fillingham. Wide panoramic views are also possible from the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Health and Wellbeing*: The Unwooded Vales provide a very limited network of PRoW leading to the dependence on the more direct arterial routes that run east to west across the area linked by a series of narrow straight lanes.<br><br>*Important Spatial Function:* The landscape benefits from high levels of visual containment despite the low levels of woodland cover. Instead, the local landform, hedgerows and shelter belts create visual containment and give the Vales Landscape an intimate character.<br><br>**Overall,** the value of the Unwooded Vales is shaped by the strong agricultural character, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape. In recent decades, the productivity of the land has stimulated widespread change in the rural landscape. | *Character:* Medium landscape tolerance with some scope for change to landscape character. Enhancing the visibility of streams, dykes and other watercourses in the landscape would bring forward some positive benefits.<br><br>*Quality:* The most widespread change has been in agricultural intensification, where the change from pastoral to arable cropping has resulted in loss of hedges, and consequently increase in field sizes.<br><br>*Value:* The landscape shows evidence of historic settlement with farms, nucleated villages, and small hamlets such as Thorpe le Fallows and Coates, which are features value that are not highly recognised.<br><br>*Capacity:* Features are evident, but they are locally commonplace. Some features make a minimal contribution to landscape character and scope for mitigation would therefore help to reinforce their prominence in the landscape. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium | Medium | **Medium** | **Not Applicable** |

| | Construction | Operation (Year 1) | Operation (Year 15) | Decommissioning |
|---|---|---|---|---|
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited and would not affect the integrity of the character area and would be short term.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites creating a much greater level of vegetation locally, creating many associated beneficial effects.<br><br>These short-lived construction activities would not adversely affect the 4a Unwooded Vales Character Area as these are short term. There would be a change to the arable land use which will be beneficial to soils and watercourses, significantly increase biodiversity and help to capture carbon. The field boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new panels. There would be very limited, temporary, and short-term adverse changes to the Character Area.<br><br>Overall, the Unwooded Vales Character Area 4a is able to accommodate the changes that arise through the construction of the Site with minor adverse effects. The integrity of all features will be retained and enhancement at ground level through initial grassland will have beneficial effects from the outset. | Within the Cottam 1 Site/Sites, the following secondary mitigation will be implemented at the operation stage (Year 1) to enhance the regional landscape character:<br><br><u>Cottam 1 North Site</u><br>Across the Site, existing woodlands are to be enhanced with the addition of successional scrub to their boundaries and a 20m ecological buffer to retain their integrity and increase biodiversity.<br><br>Two watercourses that run broadly east/west across the Site are to be enhanced with a minimum 8m belt of tall herb mix adjacent on both sides with shelterbelt planting along their lengths as appropriate to create additional biodiversity and help to define the watercourse visually within the landscape setting.<br><br>Blocks of scattered trees will help to integrate lone field trees into the landscape and visually link small blocks of trees.<br><br>New and enhanced hedgerows within the Site, both with additional irregularly spaced hedgerow trees will further enhance the field boundary pattern and add to the overall level of tree cover locally.<br><br>Two areas of scattered tree belts are proposed adjacent to the informal watercourses to the east of the Site, and these will provide additional levels of tree cover, help define the winding routes within the landscape and attenuate flood risk.<br><br>Roadside verge enhancement along the Willingham Road, will help to improve both the visual and ecological value of these verges helping to strengthen the character of this route.<br><br><u>Cottam 1 South Site</u><br>Cottam 1 South has a more varied landscape with areas of woodland to the east and the River Till to the west.<br><br>Scattered tree belts and herb mix waterside planting will again add to the visibility of this watercourse across the wider landscape and increase its biodiversity value as well as providing flood attenuation benefits.<br><br>Regular shaped fields within the Site will be further defined by both new and enhanced existing hedgerows providing a good level of tree cover over the Site and a multi-layered scene.<br><br>To the west, lower levels of development are proposed adjacent to the River Till and these are mitigated by the | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below:<br><br>Views to the north, south, east and west of the Site will be screened in the close-mid range through the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening this feature in the context of the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining and enhancing the overall character of the area.<br><br>The proposed grassland will have established and will have settled into its natural scheme with some minor appropriate management of differing regimes. The soil quality will be considerably improved through the lack of cultivation and the chemical run-off will be reduced around the Site(s) enhancing the water quality generally. There will be considerable biodiversity gains through the establishment of the varied grassland types and regimes and a long-term increase in pollinator species and bird and other species and numbers locally.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | reversion of some areas to wetland grazing marsh and bird mitigation areas adjacent to the river. These, together with the scattered trees along its route, the augmented tree and hedgerow planting and riverside margins will reinforce this feature withing the local character area and increase levels of tree cover generally.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and the varied grassland areas will have become established, starting to create valuable habitats.<br><br>Overall, this will help to link habitats and strengthen the overall character locally and maintain a sense of place. Important opportunities to bolster the local vegetation cover, buffering and connecting existing fragmented vegetation, aims to create a more resilient and biodiverse landscape.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of the LCA<br>- Grassland reversion<br>- A more varied landscape across the LCA<br>- Improved management of existing vegetation<br>- Less intensively managed land<br>- Soil improvements<br>- Water quality improvements<br>- Increased visibility/definition of watercourses across the landscape.<br>- Increased woodland/vegetation cover<br>- Increased riparian species vegetation<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Overwintering opportunities within wetland and elsewhere with Bird mitigation<br>- Potential animal grazing<br>- Reinstatement of historic field patterns<br>- Strengthened Character Area generally<br>- Improved shelter/protection across the landscape<br><br>Adverse effects (mitigated):<br>- Panels and structures across landscape<br>- Increased hard standing areas – water runoff management required<br>- Potential minor pollution around substations<br>- Visual intrusion in early years<br>- Increased traffic in the local area<br>-<br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | Following mitigation, at Year 15, The existing woodland and hedgerows locally will be augmented by increased vegetation cover creating both visual and ecological links across the landscape to the adjoining woodland blocks. Grassland mixes will have established and will create valuable habitats with soil structure greatly improved through cessation of arable cultivation.<br><br>By Year 15, the Site/Sites at Cottam 1 will present a 'well treed' landscape in line with the character area aims, the existing vegetation having been allowed to grow out and new trees, hedgerows and scrub having fully established and begun to mature.<br><br>The overall scene will be relatively well vegetated, with scattered and irregularly spaced trees, following the existing lines of both historic field boundaries and the road network as well as local watercourses.<br><br>This, together with the proposed mix of varied grasslands across the Site will help to somewhat reverse the over intensification of recent arable farming methods to create a much richer tapestry of habitats and features within the landscape. This varied development, set against the existing arable landscape will retain the overall perception of an open and expansive landscape but will appear as a more layered and cohesive scene across the Unwooded Vales and will help to integrate these with the Wooded Vales to the west.<br><br>Following mitigation, the Site is able accommodate change without undue adverse effects and there will be considerable beneficial effects in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area of the 4a Unwooded Vales. | |

| **5km Study Area:** | | | | |
|---|---|---|---|---|
| **Magnitude** | Low | Low | Medium | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 1 Site/Sites)** | | |
|---|---|---|
| | **In Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects upon LCA – 4a of the Cottam 1 Site with the other Cumulative Sites (Cottam 2 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, the segregated nature of the Sites; together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area within the character area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.1.1 [C6.4.8.15.1.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the Cottam 2 and Cottam 3a and 3b Sites would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are very minor patches of cumulative intervisibility which may be a focus of likely significant effects, between the Cottam 1 Site/Sites and Cottam 2 Site/Sites, located to the:<br>• east of Upton and to the south of Sturgate Airfield<br>• south of Kexby in the locality of Valley Farm<br>• east of Willingham by Stow in the locality of the residential property known as Carisbrooke<br>• east of Stow, just to the east of the property known as Tam Howes; and<br>• west of Sturton by Stow, extending from West Syke Lane as far as Normanby by Stow.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2 Site and Cottam 3a Site, located to the:<br>• northeast of Sturton by Stow, extending between Tillbridge Road and Ingham Road.<br><br>There are very minor patches of cumulative intervisibility between Cottam 1 Site/Sites, Cottam 2 Site, and Cottam 3b Site, located to the:<br>• northeast of Sturton by Stow, extending between School Lane Farm and Ingham Road.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets: | *In Summary*<br>The Cumulative Effects upon LCA – 4a of the Scheme with the other Cumulative Developments is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area within the character area<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cotton 1 Site/Sites and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2,3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6]**<br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8]**<br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The minor patches of cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape within the Unwooded Vales Character Area. |

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| | **Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The minor patches of cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape within the Unwooded Vales Character Area.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is low for the Cumulative Sites because there are local patches of intensive cumulative change to a limited area of a landscape of medium sensitivity, affecting a few characteristics without altering the overall impression of its character. | |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

**Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 2 Site)**

**Receptor Baseline:**

Within the Cottam 2 Site at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends across the entirety of the 2km Study Area and then extends into the 5km Study Area where at its eastern most edge it shares a boundary with RLCT Profile: 6a Limestone Scarps and Dipslopes. The western extent of the 5km Study Area is also host to a large part of RLCT Profile: 4b Wooded Valeys.

There are also areas defined as 'Built Up Area' that extend from Gainsborough towards Blyton and Corringham following the main transport routes. The settlements of Willoughton and Hemswell are located on the boundary with RLCT Profile 6a Limestone Scarps and Dipslopes.

**Key Features:**
The main settlement of Gainsborough is located just within the 5km Study Area at the eastern edge. Other settlements include Blyton, Pilham, Corringham, Blyborough, Willoughton, Hemswell, Harpswell, Springthorpe and Heapham. The main highway corridors include the A631 (Corringham Road leading to Harpswell Lane), B1398 (Middle Street) and the A159 (Thonock Road). Key characteristics of the Unwooded Vales landscape character include an extensive, low lying rural landscape underlain by Triassic and Jurassic mudstones and clays and widespread superficial deposits. There are expansive long distance and panoramic views from higher ground at the margin of the vales from the edge of settlements such as Hemswell and Willhoughton. The scarp slope that follows the edge of the vales gives a sense of visual containment. There are also low hills and ridges which gain visual prominence in an otherwise gently undulating landscape. The complex drainage patterns of watercourses flow within the shallow undulations often flanked by pasture and riparian habitats, which adds to the character of the area. There is limited woodland cover, and instead the landscape relies on shelterbelts and hedgerow trees to gain a greater visual significance. The Unwooded Vales within the East Midlands region is sparsely settled with small villages and dispersed farms, linked together by quiet rural lanes. This road pattern is a common feature within the Cottam 2 Site where the settlements of Corringham, Yawthorpe, Aisby and Pilham are linked by a series local lanes and tracks. The Unwooded Vales generally have a strong sense of place, with major landform features flanking the lower lying areas creating broad scale visual containment. Rivers and streams are also an important landscape feature, and these include Aisby Beck, Corringham Beck and Yawthorpe Beck.

**Character Context:**

The Cottam 2 Site is mainly located within RLCT 4a: Unwooded Vales, where the land area is found to the north of the A631 (Corringham Road) and in the context of the settlements of Pilham, Corringham and Springthorpe. To the east of the Cottam 2 Site, RLCT 6a: Limestone Scarps and Dipslopes shares the outer 5km Study Area. The ridgeline (to the east) then gives strong containment where the settlements of Willhoughton, Hemswell and Harpswell mark the boundary with the B1398.

RLCT 4a: Unwooded Vales landscape character type is host to the Cottam 2 Site within the 2km study area and the 5km study area.

RLCT 4a is considered to form part of the immediate landscape context for the Cottam 2 Site.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change, the Unwooded Vales aims to protect existing rural landscape features, in particular the restoration of hedgerows since the most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, an increase in field size. The loss of pasture is particularly evident around settlements, where grazing animals and smaller field sizes contribute to the setting and structure of several villages. Many of the rural villages have not seen widespread expansion but development pressures continue with the demand for housing, commerce and industry creating visual intrusion and extending the urban fringe. For development associated with the rural villages, specific mechanisms include Village Design Statements, and tree planting around settlement fringes to help integrate new development into the landscape.<br><br>**Overall,** the susceptibility of the Unwooded Vales is conditioned by managing growth, ensuring development is appropriate in terms of type, scale, and location. The flat, open landscape is also a key consideration and whilst the aim is to plan new tree planting around key settlements, woodland does not form a significant component of this landscape, and in considering its open and expansive character, extensive new woodland planting would be generally inappropriate.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Unwooded Vales appeal to the visual senses where the roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Aisby Beck, provide local points of interest and the opportunity to capture views across the landscape to the higher landform fringing the Vales.<br><br>*Cultural:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Yawthorpe. The landscape surrounding these settlements retain a deeply rural and tranquil character with farms linked by minor lanes and roads. There are Roman roads that pass across the area such as Middle Street indicating that these low-lying areas provided convenient routes through the hills and wetlands.<br><br>*Natural:* The extensive expanses of semi-natural habitat, rivers and streams are an important landscape feature such as Yawthorpe Beck and Coringham Beck. Overall, in such a managed agricultural environment, networks of hedgerows and hedgerow trees gain significance in offering a refuge for birds and insects.<br><br>*Recreation and Enjoyment:* The Unwooded Vales are valued for recreation which often focused on the locations where panoramic views are possible from elevated locations from rising land at the edges of the Vales. Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpses of neighboring elevated lands are often sufficient to provide a sense of place and add to the recreation and enjoyment of the area. Typically, these locations occur around Hemswell and Willoughton.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' with major landform features flanking the lower lying areas creating broad scale visual containment along the ridgeline to the east at Willhoughton, Hemswell Harpswell and Hemswell Cliff.<br><br>*Health and Wellbeing:* The Unwooded Vales provide a very limited network of PRoW leading to the dependence on the more direct arterial routes that run east to west across the area linked by a series of narrow straight lanes.<br><br>*Important Spatial Function:* The landscape benefits from high levels of visual containment despite the low levels of woodland cover. Instead, the local landform, hedgerows and shelter belts create visual containment and give the Vales Landscape an intimate character.<br><br>**Overall,** the value of the Unwooded Vales is shaped by the strong agricultural character, where in recent decades, the productivity of the land has stimulated widespread change in the rural landscape. Large areas of permanent grassland have been ploughed up and the removal of hedgerows and ditches to accommodate large scale machinery has lost many clues of former field patterns. | *Character:* Wide panoramic views also possible from the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Quality:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Yawthorpe. The landscape surrounding these settlements retain a deeply rural and tranquil character with farms linked by minor lanes and roads.<br><br>*Value:* Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpses of neighboring elevated lands are often sufficient to provide a sense of place and add to the recreation and enjoyment of the area.<br><br>*Capacity:* Features are locally commonplace and in moderate condition. Although the remaining hedgerow network is generally strong, there is nevertheless evidence of decline in several areas, with gaps and few hedgerow trees. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium | Medium | **Medium** | **Not Applicable** |

| | Construction | Operation (Year 1) | Operation (Year 15) | Decommissioning |
|---|---|---|---|---|
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited and would not affect the integrity of the character area and would be short term.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites creating a much greater level of vegetation locally, creating many associated beneficial effects.<br><br>These short-lived construction activities would not adversely affect the 4a Unwooded Vales Character Area as these are short term. There would be a change to the arable land use which will be beneficial to soils and watercourses, significantly increase biodiversity and help to capture carbon. The field boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new panels. There would be very limited, temporary, and short-term adverse changes to the Unwooded Vales Character Area 4a.<br><br>Overall, the Unwooded Vales Character Area 4a is able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all features will be retained and enhancement at ground level through initial grassland planting will have beneficial effects from the outset. | Within the Cottam 2 Site, the following secondary mitigation will be implemented at the operation stage (Year 1) to enhance the regional landscape character:<br><br>Shelterbelt and scattered tree planting to the west of the Cottam 2 Site will augment the general tree cover adjacent to the settlement of Corringham.<br><br>There is scope to provide short term and rotational sheep grazing on fields to the west of the Site close to the settlement edge to reinforce the historical land use.<br><br>Across the Site, the reinforcement of existing field boundary vegetation, with adjacent ditches will help to enhance the overall cover with the addition of hedgerow trees and the growing out of the existing low-cut hedges.<br><br>To the east of the Site a belt of scattered trees is to be set back from the watercourse with a tall herb mix provided to create a rich and biodiverse water's edge. These trees will provide additional tree cover locally helping to add to the 'well-treed' feel of the area whilst enhancing the visibility of the watercourse following its winding route.<br><br>Shrub planting around existing ponds will help to create blocks of vegetation where these are appropriate within the landscape.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and the varied grassland areas will have become established, starting to create valuable habitats.<br><br>Overall, this will help to link habitats and strengthen the overall character locally and maintain a sense of place. Important opportunities to bolster the local vegetation cover, buffering and connecting existing fragmented vegetation, aims to create a more resilient and biodiverse landscape.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of the LCA<br>- Grassland reversion<br>- A more varied landscape across the LCA<br>- Improved management of existing vegetation<br>- Less intensively managed land<br>- Soil improvements<br>- Water quality improvements | The effects at the Operational Phase at Year 15 **without** Embedded Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below:<br><br>The landscape to the north, south, east, and west of the Site will be bolstered in the close-mid range context through the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining and enhancing the overall character of the area.<br><br>The proposed grassland will have established and will have settled into its natural scheme with some minor appropriate management of differing regimes. The soil quality will be considerably improved through the lack of cultivation and the chemical run-off will be reduced around the Site(s) enhancing the water quality generally. There will be considerable biodiversity gains through the establishment of the varied grassland types and regimes and a long-term increase in pollinator species and bird and other species and numbers locally.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | - Increased visibility/definition of watercourses across the landscape.<br>- Increased woodland/vegetation cover<br>- Increased riparian species vegetation<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Overwintering opportunities within wetland and elsewhere with Bird mitigation<br>- Potential animal grazing<br>- Reinstatement of historic field patterns<br>- Strengthened Character Area generally<br>- Improved shelter/protection across the landscape<br><br>Adverse effects (mitigated):<br>- Panels and structures across landscape<br>- Increased hard standing areas – water runoff management required<br>- Potential minor pollution around substations<br>- Visual intrusion in early years<br>- Increased traffic in the local area<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>Following mitigation, at Year 15, The existing woodland and hedgerows locally will be augmented by increased vegetation cover creating both visual and ecological links across the landscape to the adjoining woodland blocks. Grassland mixes will have established and will create valuable habitats with soil structure greatly improved through cessation of arable cultivation.<br><br>By Year 15, the Site at Cottam 3a will present a 'well treed' landscape in line with the character area aims, the existing vegetation having been allowed to grow out and new trees, hedgerows and scrub having fully established and begun to mature.<br>The overall scene will be relatively well vegetated, with scattered and irregularly spaced trees, following the existing lines of both historic field boundaries and the road network as well as local watercourses.<br><br>This, together with the proposed mix of varied grasslands across the Site will help to somewhat reverse the over intensification of recent arable farming methods to create a much richer tapestry of habitats and features within the landscape. This varied development, set against the existing arable landscape will retain the overall perception of an open and expansive landscape but will appear as a more layered and cohesive scene across the Unwooded Vales and will help to integrate these with the Wooded Valeys to the west.<br><br>Following mitigation, the Site is able accommodate change without undue adverse effects and there will be considerable beneficial effects in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area of the 4a Unwooded Vales. | |
| **Magnitude** | Low | Low | Medium | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 2 Site) | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects upon LCA – 4a of the Cottam 2 Site with the other Cumulative Sites (Cottam 1, 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, the segregated nature of the Sites; together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area within the character area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.2 [C6.4.8.15.1.2]** which shows that with the Cottam 2 Site, cumulative visibility with Cottam 1 Site/Sites and Cottam 3a and 3b Sites would not be experienced across the entirety of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of intervisibility between the Cottam 2 Site and with the Cottam 3a and Cottam 3b Sites extending from the:<br>• South boundary of the Cottam 2 Site, starting at the eastern edge of Corringham and reaching as far as Yawthorpe Beck and Yawthorpe<br>• West boundary of the Cottam 2 Site, extending as far as Pilham Lane<br>• East boundary of the Cottam 2 Site, extending as far Yawthorpe and Yawthorpe Fox Covert<br>• Northwest boundary of the Cottam 2 Site, extending as far as the Cottam 3a and 3b Sites.<br><br>Potential cumulative visibility between the Cottam 2 Site and with the Cottam 3a and Cottam 3b Sites would not be experienced however, due to the intervening settlements of Corringham, Yawthorpe, Aisby, Dunstall and Pilham. The flat landform and intervening vegetation cover would also close down any inter-visibility across the landscape between these areas.<br><br>There is a local patch of intervisibility between the Cottam 2 Site and with the Cottam 3b Site comprising the:<br>• Northern-most tip of the Cottam 2 Site extending across the medieval village of Dunstall as far as the medieval village of Southorpe; and<br>• Southeast of the River Eau, extending as far as Huckerby Farm and Huckerby Bungalows.<br><br>Potential cumulative visibility between the Cottam 2 Site and the Cottam 3b Site would not be experienced however, due to the intervening vegetation lining Aisby Beck and Yawthorpe Beck. The flat landform and intervening vegetation cover would also close down and inter-visibility across the landscape between these Sites/Site.<br><br>There are local patches of intervisibility between All Sites comprising the:<br>• North of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe<br>• West of the settlement of Corringham, extending from Staplegate House as far Windy Ridge on Pilham Lane<br>• West of Springthorpe, extending across the landscape as far as Harpswell Low Farm; and<br>• East of Yawthorpe, extending as far as Hemswell. | *In Summary*<br>The Cumulative Effects upon LCA – 4a of the Scheme with the other Cumulative Developments is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area within the character area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.2 [C6.4.8.15.2.2]** which shows that with the Cottam 2 Site, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 2 and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The minor patches of cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape within the Unwooded Vales Character Area. |

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| | Potential cumulative visibility between All Sites would not be experienced due to the intervening settlements of Corringham, Yawthorpe, Aisby, Dunstall and Pilham. The flat landform and intervening vegetation cover would also close down and inter-visibility across the landscape between these areas.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. These local patches of cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape within the Unwooded Vales Character Area 4a. | |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only Embedded** Mitigation: Low Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15) Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only Embedded** Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor Not **Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor Not **Significant**<br>Operation (Year 15) : Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only Embedded** Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 3a Site) |
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| **Receptor Baseline:**<br><br>Within the Cottam 3a Site, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales is located within the 2km Study Area, but only extending across its eastern most part, then sharing the western most part with RLCT Profile 4b: Wooded Vales. The landscape character type then occupies an eastern part of the 5km Study Area where it shares a boundary with Kirton in Lindsey. The western part of the 5km Study Area then comprises of a mixture of RLCT 2b: Planned and Drained Fens and Carrlands, RLCT 4a: Unwooded Vales and RLCT 4b: Wooded Vales, The Unwooded Vales is generally characterised by mixed agriculture set within an enclosed landscape of low, well-maintained hedgerows.<br><br>There are also areas defined as 'Built Up Area' that extend from Gainsborough towards Blyton following the main transport routes. The settlements of Blyton, Laughton, Scotton and Scotter are located on the boundary with RLCT Profile 4b: Wooded Vales.<br><br>**Key Features:**<br>This is the land area that sits to the north of Kirton Road B1205 with a disused airfield located in its central part. To the east of the 2km Study Area the settlement of Northorpe occupies an area of locally higher ground at 20m AOD. The Cottam 3a Site therefore spans two different landscape character types with the majority located within Unwooded Vales whilst the western most corner of the Site/Sites (close to Blyton) is within the 'Built Up Area' which is associated with the main highway corridor of the A159 (Laughton Road). Unwooded Vales comprises of an extensive, low lying rural landscape underlain by Triassic and Jurassic mudstones and clays and widespread superficial deposits. This landscape character type offers expansive long distance and panoramic views from higher ground at the margin of the Unwooded Vales which gives a sense of visual containment. The land within this landscape character type has complex drainage patterns of watercourses that flow within shallow undulations often flanked by pasture and riparian habitats. Limited woodland cover is a key characteristic of the Unwooded Vales, and this therefore relies on shelterbelts and hedgerow trees to gain a greater visual significance and habitat value. The landscape within this landscape character type is sparsely settled with small villages and dispersed farms linked by quiet rural lanes.<br><br>**Character Context:**<br><br>The Cottam 3a Site is mainly located within RLCT 4a: Unwooded Vales landscape character type, where the land area is found to the north of Kirton Road B1205 (and mainline railway) and to the north of the settlement of Pilham and northeast of the settlement of Blyton where it forms the boundary with the adjoining RLCT 4b: Wooded Vales. To the east of the Cottam 3a Site, the settlement of Northorpe forms part of a wider collection of other scattered farmsteads across this landscape character type. The ridgeline (further to the east) then gives strong containment where the settlements of Kirton in Lindsey, Grayingham, Blyborough and Willhoughton mark the boundary with the B1398.<br><br>RLCT 4a: Unwooded Vales landscape character type is host to the Cottam 3a Site within the 2km study area and the 5km study area.<br><br>RLCT 4a is considered to form part of the immediate landscape context for the Cottam 3a Site |

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change, the Unwooded Vales aims to protect existing rural landscape features, in particular the restoration of hedgerows since the most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, an increase in field size. The loss of pasture is particularly evident around settlements, where grazing animals and smaller field sizes contribute to the setting and structure of several villages. Many of the rural villages have not seen widespread expansion but development pressures continue with the demand for housing, commerce and industry creating visual intrusion and extending the urban fringe. For development associated with the rural villages, specific mechanisms include Village Design Statements, and tree planting around settlement fringes to help integrate new development into the landscape.<br><br>**Overall,** the susceptibility of the Unwooded Vales is conditioned by managing growth, ensuring development is appropriate in terms of type, scale, and location. The flat, open landscape is also a key consideration and whilst the aim is to plan new tree planting around key settlements, woodland does not form a significant component of this landscape, and in considering its open and expansive character, extensive new woodland planting would be generally inappropriate.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Unwooded Vales appeal to the visual senses where the roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Northorpe Beck, provide local points of interest and the opportunity to capture views across the landscape to the higher landform fringing the Unwooded Vales at Kirton in Lindsey.<br><br>*Cultural:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Northorpe. The landscape surrounding these settlements retain some rural and tranquil character with farms, but minor lanes and roads are interrupted by the presence of the former airfield. There are Roman roads that pass across the wider area such as Ermine Street indicating that these low-lying areas provided convenient routes through the hills and wetlands.<br><br>*Natural:* The extensive expanses of semi-natural habitat, rivers, and streams are an important landscape feature such as Northorpe Beck and its associated tributaries. Overall, in such a managed airfield biased and large-scale agricultural environment, networks of hedgerows and hedgerow trees gain significance in offering a refuge for birds and insects.<br><br>*Recreation and Enjoyment:* The Unwooded Vales are valued for recreation which often focuses on the locations where panoramic views are possible from elevated locations from rising land at the edges of the Vales. Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpse of neighboring elevated are often sufficient to provide a 'sense of place' and add to the recreation and enjoyment of the area. Typically, these locations occur around Blyton to the southwest and Willoughton to the southeast.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' with major landform features flanking the lower lying areas creating broad scale visual containment along the ridgeline to the east at Willhoughton, Blyborough and Grayingham. Wide panoramic views are also possible from the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Health and Wellbeing:* The Unwooded Vales provide a very limited network of PRoW leading to the dependence on the routes that crisscross the area in all directions, linked by a series of narrow tracks that lead to isolated farmsteads, and which often create 'no-through roads' in the landscape.<br><br>*Important Spatial Function:* The landscape benefits from high levels of visual containment despite the low levels of woodland cover. Instead, the local landform, hedgerows and shelter belts create visual containment and give the Vales Landscape an intimate character.<br><br>**Overall,** the value of the Unwooded Vales is shaped by the strong former airfield use along with agricultural character, with wide areas retaining a strong sense of openness. In contrast, the low levels of woodland cover create a relatively expansive landscape. In recent decades, the productivity of the land has stimulated loss of pasture, loss of hedges and increase in field sizes. | *Character:* The roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Blyton Beck, provide local points of interest and the opportunity to capture views across the landscape.<br><br>*Quality:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as the Medieval village of Southorpe. The landscape surrounding these settlements retain some rural and tranquil character with farms, but minor lanes and roads are interrupted by the presence the former airfield in parts.<br><br>*Value:* Areas have a positive landscape character but include some patches of degradation where agricultural intensification has eroded landscape character, particularly around the edges of settlements.<br><br>*Capacity:* The landscape benefits from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or |

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| | | | landscape character impact at this Embedded Mitigation stage |
| Medium | Medium | **Medium** | **Not Applicable** |

| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
|---|---|---|---|---|
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited and would not affect the integrity of the character area and would be short term.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites creating a much greater level of vegetation locally, creating many associated beneficial effects.<br><br>These short-lived construction activities would not adversely affect the 4a Unwooded Vales Character Area as these are short term. There would be a change to the arable land use which will be beneficial to soils and watercourses, significantly increase biodiversity and help to capture carbon. The field boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new panels. There would be very limited, temporary, and short-term adverse changes to the Unwooded Vales Character Area 4a.<br><br>Overall, the Unwooded Vales Character Area 4a is able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all features will be retained and enhancement at ground level through initial grassland planting will have beneficial effects from the outset. | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>A new hedgerow with hedgerow trees, enhanced existing hedgerows and a belt of scattered trees are proposed around field K1. This field is close to the settlement edge and the additional tree planting will help to increase the overall tree over around this area creating a more 'well-treed' perception. The varied grass mixes and potential for short term, rotational sheep grazing within this small field will partially restore the historic pattern close to settlements.<br><br>Further within the Site a series of new hedges around the existing airfield structures will further enhance the overall character and reduce the scale and bleakness of this particular area whilst retaining the overall open character.<br><br>Enhanced hedgerows, particularly along the Kirton Road will also help to break up the landscape to some degree and the increase in vegetated cover will enhance visitor experience along this route.<br><br>A strong belt of successional scrub to the west of the Site adjacent to Blyton as well as new hedgerows around existing airfield features will help to integrate the development into the landscape whilst strengthening the character close to this settlement.<br><br>To the east of the Site, another belt of successional scrub will help to enhance the visibility of this small watercourse within the landscape, following its winding route.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east, and west of the Cottam 3a Site will be screened in the close-mid range proximity due to the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining and enhancing the overall character of the area.<br><br>The proposed grassland will have established and will have settled into its natural scheme with some minor appropriate management of differing regimes. The soil quality will be considerably improved through the lack of cultivation and the chemical run-off will be reduced around the Site(s) enhancing the water quality generally. There will be considerable biodiversity gains through the establishment of the varied grassland types and regimes and a long-term increase in pollinator species and bird and other species and numbers locally.<br><br>Growth of existing and proposed vegetation is assumed to be: | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | the varied grassland areas will have become established, starting to create valuable habitats.<br><br>Overall, this will help to link habitats and strengthen the overall character locally and maintain a sense of place. Important opportunities to bolster the local vegetation cover, buffering and connecting existing fragmented vegetation, aims to create a more resilient and biodiverse landscape.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of the LCA<br>- Grassland reversion<br>- A more varied landscape across the LCA<br>- Improved management of existing vegetation<br>- Less intensively managed land<br>- Soil improvements<br>- Water quality improvements<br>- Increased visibility/definition of watercourses across the landscape.<br>- Increased woodland/vegetation cover<br>- Increased riparian species vegetation<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Overwintering opportunities within wetland and elsewhere with Bird mitigation<br>- Potential animal grazing<br>- Reinstatement of historic field patterns<br>- Strengthened Character Area generally<br>- Improved shelter/protection across the landscape<br><br>Adverse effects (mitigated):<br>- Panels and structures across landscape<br>- Increased hard standing areas – water runoff management required<br>- Potential minor pollution around substations<br>- Visual intrusion in early years<br>- Increased traffic in the local area<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>Following mitigation, at Year 15, The existing woodland and hedgerows locally will be augmented by increased vegetation cover creating both visual and ecological links across the landscape to the adjoining woodland blocks. Grassland mixes will have established and will create valuable habitats with soil structure greatly improved through cessation of arable cultivation.<br><br>By Year 15, the Cottam 3a Site will present a 'well treed' landscape in line with the character area aims, the existing vegetation having been allowed to grow out and new trees, hedgerows and scrub having fully established and begun to mature.<br><br>The overall scene will be relatively well vegetated, with scattered and irregularly spaced trees, following the existing lines of both historic field boundaries and the road network as well as local watercourses.<br><br>This, together with the proposed mix of varied grasslands across the Site will help to somewhat reverse the over intensification of recent arable farming methods to create a much richer tapestry of habitats and features within the landscape. This varied development, set against the existing arable landscape will retain the overall perception of an open and expansive landscape but will appear as a more layered and cohesive scene across the Unwooded Vales and will help to integrate these with the Wooded Vales to the west.<br><br>Following mitigation, the Site(s) are able accommodate change without undue adverse effects and there will be considerable beneficial effects in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area of the 4a Unwooded Vales. | |
| **5km Study Area:** | | | | |
| **Magnitude** | Low | Low | Medium | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |

| | | | | |
|---|---|---|---|---|
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 3a Site)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects upon LCA – 4a of the Cottam 3a Site with the other Cumulative Sites (Cottam 1, 2 and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, the segregated nature of the Sites; together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure 8.15.1.3 [C6.4.8.15.1.3] which shows that with the Cottam 3a Site, cumulative visibility with the Cottam 1 Site/Sites, Cottam 2, and Cottam 3b Sites would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of intervisibility between Cottam 3a and 3b Site, extending from the:<br>• Northeast boundary of the Cottam 3a Site, defined to the west by the Green Respect Burial Park and Park House Farm, and reaching as far as Northorpe in the east<br>• East boundary of Cottam 3a Site, and stopping short of Cold Harbour Farm; and<br>• North boundary of the Cottam 3b Site, extending for a short distance as far as Grange Farm and Top Farm.<br><br>Potential cumulative visibility between the Cottam 3a and 3b Site would not be experienced however, due to the intervening vegetation bordering the mainline railway and the isolated settlement comprising Grange Farm and Top Farm. The flat landform and intervening woodland blocks, hedgerows and tree cover would also close down any inter-visibility across the landscape between these cumulative sites.<br><br>There are local patches of intervisibility between Cottam 3a, 3b and Cottam 2 Sites, extending from the:<br>• South boundary of the Cottam 3b Site, bordered by Pilham to the west and the medieval settlement of Dunstall to the east, and reaching as far as Springthorpe in the south<br>• South boundary of the Cottam 3a Site, bordered by the eastern edge of Blyton to the west, reaching Grange Farm and stopping short of the mainline railway; and<br>• North boundary of the Cottam 3a Site, following the alignment of the A159 (Laughton Road) and stopping short to the west of the Green Respect Burial Park.<br><br>Potential cumulative visibility between Cottam 3a, 3b and the Cottam 2 Site would not be experienced however, due to the intervening settlements of Corringham, Yawthorpe, Aisby, Dunstall and Pilham. The flat landform and intervening vegetation cover would also close down any inter-visibility across the landscape between these cumulative sites.<br><br>There is a local patch of intervisibility between All Sites, located to the: | *In Summary*<br>The Cumulative Effects upon LCA – 4a of the Scheme with the other Cumulative Developments is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a and 3b Sites , cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 3a Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3a Site would not alter the overall character of the landscape within the Unwooded Vales Character Area 4a. |

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| | • East of the Cottam 3b Site and north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe.<br><br>Potential cumulative visibility between All Sites would not be experienced however, due to the intervening settlements of Corringham, Yawthorpe, Aisby, Dunstall and Pilham. The flat landform and intervening vegetation cover would also close down and inter-visibility across the landscape between these cumulative sites.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3a Site would not alter the overall character of the landscape within the Unwooded Vales Character Area 4a. | |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15) Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor Not **Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities

| Landscape Receptor – Regional Scale Landscape Character – 4b: Wooded Vales (Cottam 3a Site) |
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**Receptor Baseline:**

Within the Cottam 3a Site, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4b Wooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Wooded Vales extends into the western section of the 2km Study Area and shares a boundary with the 'Built Up Area' that extend eastwards from Gainsborough towards Blyton following the main transport route of the A159 (Thonock Road). The Wooded Vales also extends into the 5km Study Area and shares a boundary with RLCT Profile 2b: Planned and Drained Fens and Carrlands. The settlements of Blyton, Laughton, Scotton and Scotter are located close to the 5km Study Area boundary with RLCT Profile 4b: Wooded Vales.

**Key Features:**

This is the land area that sits to the north of the mainline railway and to the west of the Kirton Road B1205. This landscape character type is located to the west of the settlement of Blyton and that extends north towards Laughton Woods. The woodlands form part of the Laughton Area of Greater Landscape Value (AGLV) and occupy the western and northern extent of landscape character type. The woodlands to the east are bisected by the A159 that links Scotter with Blyton and to the west, Laughton Woods is bordered by the secondary road that heads north from Morton. To the center of Laughton Woods is Scotton Common with Hardwick Hill located to the west of the common and rising to 30m AOD. Laughton Woods also includes several waterbodies including Green Howes and Jerry's Bog. There are also several Sites of Special Scientific Interest (SSSI) associated with these waterbodies. The Cottam 3a Site extends across two different landscape character types within the 2km Study Area. The majority of the land sits within Unwooded Vales whilst the western part of the Site/Sites that sits close to Blyton is within areas defined as 'Built Up Area'. Wooded Vales sit to the west and northwest of both the Cottam 3a Site and extends into the 5km Study Area. The landscape character type consists of gently undulating landform formed over soft mudstone and clay geology, sharing many characteristics with the wider Unwooded Vales landscape character type. There are deposits of superficial geology, particularly cover sands and till influences local land use and semi-natural habitat cover. Low hills and ridges gain visual prominence as elevated landform to give a broad sense of containment, and these include areas of higher ground at Hardwick Hill and the landscape to the SW of Scotter. There are numerous watercourses that flow within shallow undulations often flanked by pasture and riparian habitat, but many of them are formalized land drains with a geometric pattern. There is a higher concentration of land drains to the southern part of the area between Blyton and East Stockwith. There is a relatively high woodland cover within this landscape character type with notable tracts of ancient semi-natural woodland along the outer fringes of parishes and large coniferous plantations. There are notable areas of woodland at Owlet Plantation, to the west of East Stockwith, within Laughton Common and Scotton Common. This landscape character type is sparsely settled with dispersed farms linked by quiet rural lanes and tracks often flanked by tall hedgerows and tree belts. Most of the tracks have a strong east to west alignment and possibly former drove roads leading to the river Trent.

**Character Context:**

The Cottam 3a Site is mainly located within RLCT 4a: Unwooded Vales landscape character type, where the land area is found to the north of Kirton Road (and mainline railway) and to the north of the settlement of Pilham and northeast of Blyton where it forms the boundary with the adjoining RLCT 4b: Wooded Vales. To the east of the Cottam 3a Site, the village of Northorpe adds to the settlement pattern and forms part of a wider collection of scattered farmsteads across this landscape character type. The ridgeline (further east) then gives strong containment where the settlements of Kirton in Lindsey, Grayingham, Blyborough and Willhoughton mark the boundary with the B1398.

RLCT 4b: Wooded Vales landscape character type is found immediately to the west of the Cottam 3a Site within the 2km Study Area and 5km Study Area.

RLCT 4b is considered to form part of the immediate landscape context for the Cottam 3a Site

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change, the Wooded Vales aims to promote new woodland planting as this is a significant component of the landscape. The aim should be to also protect the distinctive character of the settlements and consider the visual impact of any new development. The restoration of hedgerows should also be given priority to strengthen the field pattern and enhance linkages between woodlands. The impact on the setting of village churches is also particularly important as these are distinctive local landmarks. There are regular patterns of enclosure and modern arable fields where hedgerows have been removed, but due to the abundance of large woodland blocks this helps reinforce a sense of enclosure.<br><br>**Overall,** the susceptibility of the Wooded Vales is conditioned by several key forces for change that have the potential to shape the future of the landscape. These include the agricultural intensification and farm amalgamation that is resulting in the loss or damage of many typical landscape features, including traditional patterns of field boundaries, remnants of ridge and furrow, and grasslands. The loss of grazing fields around the edges of villages that is leading to a more homogenous landscape.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Wooded Vales appeal to the visual senses with extensive access to a variety of footpaths often framed by these large areas of woodland. There are areas where rising landform such as Hardwick Hill, but the dense woodland does not allow opportunity for views.<br><br>*Cultural:* The landscape shows evidence of small villages, hamlets, and farms but they are scarcely distributed within the landscape. This includes settlement of Laughton with the Grade II Listed Laughton Hall Farmhouse and Grade I Listed Church of All Saints, both which fall within the Area of Greater Landscape Value (AGLV).<br><br>*Natural:* There are large areas of ancient and species-rich native woodland juxtaposed with regular blocks of coniferous plantations that can be accessed by the woodland trail through Laughton Woods and Laughton Forest leading to the village of Scotton. Sizable areas of water bodies are also notable with wet woodland sites characterised by native broadleaved species and affording SSSI status.<br><br>*Recreation and Enjoyment:* The Wooded Vales are valued for recreation which are focused on the woodland trail network that crosses Laughton Woods, Laughton Forest, Scotton Common Nature Reserve and Green Howe Pond.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' endorsed by the strong woodland character, with some areas retaining a sense of tranquility and remoteness, notably within the central wooded parts.<br><br>*Health and Wellbeing:* The Wooded Vales provide a very limited network of PRoW within the wider landscape, but this is more than compensated for within Laughton Woods, which is the main focus for recreation for people as far as Scunthorpe and Gainsborough.<br><br>*Important Spatial Function:* The landscape benefits from the woodland areas that occupy the northern part of the area, but also extend south towards Gainsborough and East Stockwith and include Owlet Plantation.<br><br>**Overall,** the value of the Wooded Vales is shaped by the presence of Laughton Woods that has seen relatively little settlement intervention. The landscape possesses a former framework of drainage dykes that feed the river Trent to the west. However, in recent decades, the prominence of arable farming between the woodlands is impacting on the setting of these areas. | *Character:* Areas have a positive character, but the loss of grazing fields around the edges of villages is leading to a more homogenous landscape.<br><br>*Quality:* Mature vegetation is characteristic that occupies the northern part of the area with some areas retaining a sense of tranquility and remoteness.<br><br>*Value:* The Wooded Vales are valued for recreation which are focused on the woodland trail network that crosses Laughton Woods, Laughton Forest, Scotton Common Nature Reserve and Green Howe Pond.<br><br>*Capacity:* There would be a lower landscape tolerance and scope for landscape change due to the presence of extensive woodland that has seen relatively settlement intervention. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium | Medium to High | **Medium to High** | **Not Applicable** |

| | Construction | Operation (Year 1) | Operation (Year 15) | Decommissioning |
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| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited and would not affect the integrity of the character area and would be short term.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites creating a much greater level of vegetation locally, creating many associated beneficial effects.<br><br>These short-lived construction activities would not adversely affect the 4b Wooded Vales Character Area as these are short term. There would be a change to the arable land use which will be beneficial to soils and watercourses, significantly increase biodiversity and help to capture carbon. The field boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new panels. There would be very limited adverse changes to the Character Area.<br><br>Overall, the Wooded Vales Character Area is able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all features will be retained and enhancement at ground level through initial grassland planting will have beneficial effects from the outset. | A very small section of the Cottam 3a Site lies within the Wooded Vales, being field K1. It relates more closely to the Unwooded Vales although the Wooded Vales to the west of the Site generally have some influence on this area as a whole.<br><br>Within the Cottam 3a Site, the following secondary mitigation will be implemented at the operation stage (Year 1) to enhance the regional landscape character:<br><br>The enhancement objectives for the two-character areas include additional tree cover generally and some increase in grassland. The wooded vales allow for more woodland planting in the area.<br><br>Within the Cottam 3a Site, the following secondary mitigation will enhance the regional landscape character.<br><br>A new hedgerow with hedgerow trees, enhanced existing hedgerows and a belt of scattered trees are proposed around field K1. This field is close to the settlement edge and the additional tree planting will help to increase the overall tree over around this area creating a more 'well-treed' perception. The varied grass mixes and potential for short term, rotational sheep grazing within this small field will partially restore the historic pattern close to settlements.<br><br>Further within the Site a series of new hedges around the existing airfield structures will further enhance the overall character and reduce the scale and bleakness of this particular area whilst retaining the overall open character.<br><br>Enhanced hedgerows, particularly along the Kirton Road will also help to break up the landscape to some degree and the increase in vegetated cover will enhance visitor experience along this route.<br><br>A strong belt of successional scrub to the west of the Site adjacent to Blyton as well as new hedgerows around existing airfield features will help to integrate the development into the landscape whilst strengthening the character close to this settlement.<br><br>To the east of the Site, another belt of successional scrub will help to enhance the visibility of this small watercourse within the landscape, following its winding route.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and | The effects at the Operational Phase at Year 15 without Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east and west of the Site will be screened in the close-mid range through the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality hedgerows both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining and enhancing the overall character of the area.<br><br>The proposed grassland will have established and will have settled into its natural scheme with some minor appropriate management of differing regimes. The soil quality will be considerably improved through the lack of cultivation and the chemical run-off will be reduced around the Site(s) enhancing the water quality generally. There will be considerable biodiversity gains through the establishment of the varied grassland types and regimes and a long-term increase in pollinator species and bird and other species and numbers locally.<br><br>A very small section of the Cottam 3a Site lies within the Wooded Vales, being field K1. It relates more closely to the Unwooded Vales although the Wooded Vales to the west of the Site generally have some influence on this area as a whole.<br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | the varied grassland areas will have become established, starting to create valuable habitats.<br><br>Overall, this will help to link habitats and strengthen the overall character locally and maintain a sense of place. Important opportunities to bolster the local vegetation cover, buffering and connecting existing fragmented vegetation, aims to create a more resilient and biodiverse landscape.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of the LCA<br>- Grassland reversion<br>- A more varied landscape across the LCA<br>- Improved management of existing vegetation<br>- Less intensively managed land<br>- Soil improvements<br>- Water quality improvements<br>- Increased visibility/definition of watercourses across the landscape.<br>- Increased woodland/vegetation cover<br>- Increased riparian species vegetation<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Overwintering opportunities within wetland and elsewhere with Bird mitigation<br>- Potential animal grazing<br>- Reinstatement of historic field patterns<br>- Strengthened Character Area generally<br>- Improved shelter/protection across the landscape<br><br>Adverse effects (mitigated):<br>- Panels and structures across landscape<br>- Increased hard standing areas – water runoff management required<br>- Potential minor pollution around substations<br>- Visual intrusion in early years<br>- Increased traffic in the local area<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>Following mitigation, at Year 15, The existing woodland and hedgerows locally will be augmented by increased vegetation cover creating both visual and ecological links across the landscape to the adjoining woodland blocks. Grassland mixes will have established and will create valuable habitats with soil structure greatly improved through cessation of arable cultivation.<br><br>By Year 15, the Site at Cottam 3a will present a 'well treed' landscape in line with the character area aims, the existing vegetation having been allowed to grow out and new trees, hedgerows and scrub having fully established and begun to mature.<br><br>The overall scene will be relatively well vegetated, with scattered and irregularly spaced trees, following the existing lines of both historic field boundaries and the road network as well as local watercourses.<br><br>This, together with the proposed mix of varied grasslands across the Site will help to somewhat reverse the over intensification of recent arable farming methods to create a much richer tapestry of habitats and features within the landscape. This varied development, set against the existing arable landscape will retain the overall perception of an open and expansive landscape but will appear as a more layered and cohesive scene across the Unwooded Vales and will help to integrate these with the Wooded Vales to the west.<br><br>Following mitigation, the Site(s) are able accommodate change without undue adverse effects and there will be considerable beneficial effects in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area.<br><br>The enhancement objectives for the two-character areas include additional tree cover generally and some increase in grassland. The Wooded Vales allow for more woodland planting in the area.<br><br>Within the Cottam 3a Site, the following mitigation will enhance the regional landscape character. | |

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| | | | A new hedgerow with hedgerow trees, enhanced existing hedgerows and a belt of scattered trees are proposed around field K1. This field is close to the settlement edge and the additional tree planting will help to increase the overall tree over around this area creating a more 'well-treed' perception. The varied grass mixes and potential for short term, rotational sheep grazing within this small field will partially restore the historic pattern close to settlements.<br><br>Further within the Site a series of new hedges around the existing airfield structures will further enhance the overall character and reduce the scale and bleakness of this particular area whilst retaining the overall open character.<br><br>Enhanced hedgerows, particularly along the Kirton Road will also help to break up the landscape to some degree and the increase in vegetated cover will enhance visitor experience along this route.<br><br>A strong belt of successional scrub to the west of the Site adjacent to Blyton as well as new hedgerows around existing airfield features will help to integrate the development into the landscape whilst strengthening the character close to this settlement.<br><br>To the east of the Site, another belt of successional scrub will help to enhance the visibility of this small watercourse within the landscape, following its winding route.<br>By Year 15, the Site at Cottam 3a will present a 'well treed' landscape in line with the character area aims, the existing vegetation having been allowed to grow out and new trees, hedgerows and scrub having fully established and begun to mature.<br><br>The overall scene will be relatively well vegetated, with scattered and irregularly spaced trees, following the existing lines of both historic field boundaries and the road network.<br><br>This, together with the proposed mix of varied grasslands across the Site will help to somewhat reverse the over intensification of recent arable farming methods to create a much richer tapestry of habitats and features within the landscape. This varied development, set against the existing arable landscape will retain the overall perception of an open and expansive landscape but will appear as a more layered and cohesive scene across the Unwooded Vales. | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |

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| **Level of Effect** | Neutral & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Regional Scale Landscape Character – 4b: Wooded Vales (Cottam 3a Site)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects upon LCA – 4b of the Cottam 3a Site with the other Cumulative Sites (Cottam 1, 2 and 3b) is Negligible at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, the segregated nature of the Sites; together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a Site, cumulative visibility with the Cottam 1 Site/Sites, Cottam 2 Site and Cottam 3b Site would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of intervisibility between the Cottam 3a and 3b Sites, extending from the:<br>• Northeast boundary of the Cottam 3a Site, defined to the west by the Green Respect Burial Park and Park House Farm, and reaching as far as Northorpe in the east<br>• East boundary of Cottam 3a Site, and stopping short of Cold Harbour Farm; and<br>• North boundary of the Cottam 3b Site, extending for a short distance as far as Grange Farm and Top Farm.<br><br>Potential cumulative visibility between the Cottam 3a and 3b Sites would not be experienced however, due to the intervening vegetation bordering the mainline railway and the isolated settlement comprising Grange Farm and Top Farm. The flat landform and intervening woodland blocks, hedgerows and tree cover would also close down any inter-visibility across the landscape between these cumulative sites.<br><br>There are local patches of intervisibility between the Cottam 3a, 3b Sites and the Cottam 2 Site, extending from the:<br>• South boundary of the Cottam 3b Site, bordered by Pilham to the west and the medieval settlement of Dunstall to the east, and reaching as far as Springthorpe in the south<br>• South boundary of the Cottam 3a Site, bordered by the eastern edge of Blyton to the west, reaching Grange Farm and stopping short of the mainline railway; and<br>• North boundary of the Cottam 3a Site, following the alignment of the A159 (Laughton Road) and stopping short to the west of the Green Respect Burial Park.<br><br>Potential cumulative visibility between the Cottam 3a and, 3b Sites and the Cottam 2 Site would not be experienced however, due to the intervening settlements of Corringham, Yawthorpe, Aisby, Dunstall and | *In Summary*<br>The Cumulative Effects upon LCA – 4b of the Scheme with the other Cumulative Developments is Negligible at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a and 3b Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 3a Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8]**<br><br>*Overall Landscape Character of the Wooded Vales*<br>Overall, the character of the Wooded Vales is shaped by the presence of Laughton Woods that has seen relatively little settlement intervention. The landscape possesses a former framework of drainage dykes that feed the river Trent to the west. The landscape benefits from the woodland areas that occupy the northern part of the area, but also extend south towards Gainsborough and East Stockwith and include Owlet Plantation. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3b Site would not alter the overall character of the landscape within the Wooded Vales Character Area 4a. |

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| | Pilham. The flat landform and intervening vegetation cover would also close down any inter-visibility across the landscape between these cumulative sites.<br><br>There is a local patch of intervisibility between All Sites, located to the:<br>• East of the Cottam 3b Site and north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe.<br><br>Potential cumulative visibility between All Sites would not be experienced however, due to the intervening settlements of Corringham, Yawthorpe, Aisby, Dunstall and Pilham. The flat landform and intervening vegetation cover would also close down and inter-visibility across the landscape between these cumulative sites.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Wooded Vales*<br>Overall, the character of the Wooded Vales is shaped by the presence of Laughton Woods that has seen relatively little settlement intervention. The landscape possesses a former framework of drainage dykes that feed the river Trent to the west. The landscape benefits from the woodland areas that occupy the northern part of the area, but also extend south towards Gainsborough and East Stockwith and include Owlet Plantation. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3b Site would not alter the overall character of the landscape within the Unwooded Vales Character Area 4a. | |
| **Magnitude** | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1): **with only** Embedded Mitigation Very Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1): **with only** Embedded Mitigation: Very Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Negligible **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Negligible **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 3b Site) |
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| **Receptor Baseline:**<br><br>Within the Cottam 3b Site, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends into the eastern section of the 2km Study Area and shares a boundary with the 'Built Up Area' that extend eastwards from Gainsborough towards Blyton following the main transport route of the A159 (Thonock Road). The Unwooded Vales also extends into the 5km Study Area and shares a boundary with RLCT Profile 6a: Limestone Scarps and Dipslopes. The settlements of Grayingham, Blyborough, Willhoughton and Hemswell are located close to the 5km Study Area boundary with RLCT Profile 4a: Unwooded Vales and RLCT 6a: Limestone Scarps and Dipslopes.<br><br>**Key Features:**<br><br>This is the land area that sits to the south of the mainline railway and to the east of Pilham Lane. To the northeast of the 2km Study Area the settlement of Northorpe occupies an area of locally higher ground at 20m AOD. The Cottam 3b Site therefore spans two different landscape character types with the majority located within Unwooded Vales whilst the western most corner of the Site/Sites (close to Blyton) is within the 'Built Up Area' which is associated with the main highway corridor of the A159 (Thonock Road). Unwooded Vales comprises an extensive, low lying rural landscape underlain by Triassic and Jurassic mudstones and clays and widespread superficial deposits. This landscape character type offers expansive long distance and panoramic views from higher ground at the margin of the Unwooded Vales which gives a sense of visual containment. The land within this landscape character type has complex drainage patterns of watercourses that flow within shallow undulations often flanked by pasture and riparian habitats. Limited woodland cover is a key characteristic of the Unwooded Vales, and this therefore relies on shelterbelts and hedgerow trees to gain a greater visual significance and habitat value. The landscape within this landscape character type is sparsely settled with small villages and dispersed farms linked by quiet rural lanes.<br><br>**Character Context:**<br><br>The Cottam 3b Site is mainly located within RLCT 4a: Unwooded Vales landscape character type, where the land area is found to the south of Kirton Road B1205 (and mainline railway) and to the northeast of the settlement of Pilham and east of the settlement of Blyton where it forms the boundary with the adjoining RLCT 4b: Wooded Vales. To the east of the Cottam 3b Site, the settlement comprises a wider collection of scattered farmsteads. The ridgeline (further to the east) then gives strong containment where the settlements of Grayingham, Blyborough and Willhoughton mark the boundary with the B1398.<br><br>RLCT 4a: Unwooded Vales landscape character type is host to the Cottam 3b Site within the 2km study area and the 5km study area.<br><br>RLCT 4a is considered to form part of the immediate landscape context for the Cottam 3b Site. |

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
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| In terms of forces for change, the Unwooded Vales aims to protect existing rural landscape features, in particular the restoration of hedgerows since the most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, an increase in filed size. The loss of pasture is particularly evident around settlements, where grazing animals and smaller field sizes contribute to the setting and structure of several villages. Many of the rural villages have not seen widespread expansion but development pressures continue with the demand for housing, commerce and industry is creating visual intrusion and extending the urban fringe.<br><br>**Overall,** the susceptibility of the Unwooded Vales is conditioned by managing growth, ensuring development is appropriate in terms of type, scale, and location. The flat, open landscape is also a key consideration and whilst the aim is to plan new tree planting around key settlements, woodland does not form a significant component of this landscape, and in considering its open and expansive character, extensive new woodland planting would be generally inappropriate.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Unwooded Vales appeal to the visual senses where the roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Blyton Beck, provide local points of interest and the opportunity to capture views across the landscape to the higher landform fringing the Unwooded Vales at Kirton in Lindsey.<br><br>*Cultural:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as the Medieval village of Southorpe. The landscape surrounding these settlements retain some rural and tranquil character with farms, but minor lanes and roads are interrupted by the presence the former airfield in parts. There are Roman roads that pass across the wider area such as Ermine Street indicating that these low-lying areas provided convenient routes through the hills and wetlands.<br><br>*Natural:* There are extensive expanses of semi-natural habitat and rivers, and streams are an important landscape feature such Blyton Beck and its associated tributaries. Overall, in such a managed airfield biased and large-scale agricultural environment, networks of hedgerows and hedgerow trees gain significance in offering a refuge for birds and insects.<br><br>*Recreation and Enjoyment:* The Unwooded Vales are valued for recreation which often focuses on the locations where panoramic views are possible from elevated locations from rising land at the edges of the Vales. Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpse of neighboring elevations are often sufficient to provide a 'sense of place' and add to the recreation and enjoyment of the area. Typically, these locations occur around Blyton to the west and Willoughton to the southeast.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' with major landform features flanking the lower lying areas creating broad scale visual containment along the ridgeline to the east at Willhoughton, Blyborough and Grayingham. Wide panoramic views are also possible from the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Health and Wellbeing:* The Unwooded Vales provide a very limited network of PRoW leading to the dependence on the more routes that crisscross the area in all directions, linked by a series of narrow tracks that lead to isolated farmsteads, and which often create 'no-through roads' in the landscape.<br><br>*Important Spatial Function:* The landscape benefits from high levels of visual containment despite the low levels of woodland cover. Instead, the local landform, hedgerows and shelter belts create visual containment and give the Vales Landscape an intimate character.<br><br>**Overall,** the value of the Unwooded Vales is shaped by the strong agricultural character and presence of the mainline railway, with wide areas retaining a strong sense of openness. Woodland cover does also not form a significant component in this relatively expansive landscape. In recent decades, the demand for housing, commerce and industry is creating visual intrusion and extending development pressures into the countryside. | *Character:* The roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Blyton Beck, provide local points of interest and the opportunity to capture views across the landscape.<br><br>*Quality:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as the Medieval village of Southorpe. The landscape surrounding these settlements retain some rural and tranquil character with farms, but minor lanes and roads are interrupted by the presence the former airfield in parts.<br><br>*Value:* Areas have a positive landscape character but include some areas of degradation where agricultural intensification has eroded landscape character, particularly around the edges of settlements.<br><br>*Capacity:* The landscape benefits from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium | Medium | **Medium** | **Not Applicable** |

| | Construction | Operation (Year 1) | Operation (Year 15) | Decommissioning |
|---|---|---|---|---|
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited and would not affect the integrity of the character area and would be short term.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites creating a much greater level of vegetation locally, creating many associated beneficial effects.<br><br>These short-lived construction activities would not adversely affect the 4a Unwooded Vales Character Area as these are short term. There would be a change to the arable land use which will be beneficial to soils and watercourses, significantly increase biodiversity and help to capture carbon. The field boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new panels. There would be very limited, temporary, and short-term adverse changes to the Character Area.<br><br>Overall, the Wooded Vales Character Area is able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all features will be retained and enhancement at ground level through initial grassland planting will have beneficial effects from the outset. | Within the Cottam 3b Site, the following secondary mitigation will be implemented at the operation stage (Year 1) to enhance the regional landscape character:<br><br>Considerable strengthening of the existing north/south field boundaries within the Site will bolster the history field pattern in this area, especially where they form intersections with the local road network and bridge crossings over the watercourses.<br><br>New and enhanced hedgerows adjacent to the existing PRoW will alter the character of this walk from an exposed and open route to a more intimate and sheltered one.<br><br>Enhanced hedgerow management and planting along the eastern boundary of the Site from Blyton level crossing down to the South of the Site will augment this vegetated roadside planting.<br><br>Successional scrub planting along the railway line to the northern boundary of the Site will reinforce this landscape feature and provide biodiversity benefits.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and the varied grassland areas will have become established, starting to create valuable habitats.<br><br>Overall, this will help to link habitats and strengthen the overall character locally and maintain a sense of place. Important opportunities to bolster the local vegetation cover, buffering and connecting existing fragmented vegetation, aims to create a more resilient and biodiverse landscape.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of the LCA<br>- Grassland reversion<br>- A more varied landscape across the LCA<br>- Improved management of existing vegetation<br>- Less intensively managed land<br>- Soil improvements<br>- Water quality improvements<br>- Increased visibility/definition of watercourses across the landscape.<br>- Increased woodland/vegetation cover<br>- Increased riparian species vegetation<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Overwintering opportunities within wetland and elsewhere with Bird mitigation<br>- Potential animal grazing<br>- Reinstatement of historic field patterns | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east, and west of the Site will be screened in the close-mid range through the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality hedgerows both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining and enhancing the overall character of the area.<br><br>The proposed grassland will have established and will have settled into its natural scheme with some minor appropriate management of differing regimes. The soil quality will be considerably improved through the lack of cultivation and the chemical run-off will be reduced around the Site(s) enhancing the water quality generally. There will be considerable biodiversity gains through the establishment of the varied grassland types and regimes and a long-term increase in pollinator species and bird and other species and numbers locally.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | - Strengthened Character Area generally<br>- Improved shelter/protection across the landscape<br><br>Adverse effects (mitigated):<br>- Panels and structures across landscape<br>- Increased hard standing areas – water runoff management required<br>- Potential minor pollution around substations<br>- Visual intrusion in early years<br>- Increased traffic in the local area<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>Following mitigation, at Year 15, The existing woodland and hedgerows locally will be augmented by increased vegetation cover creating both visual and ecological links across the landscape to the adjoining woodland blocks. Grassland mixes will have established and will create valuable habitats with soil structure greatly improved through cessation of arable cultivation.<br><br>By Year 15, the Site at Cottam 3a will present a 'well treed' landscape in line with the character area aims, the existing vegetation having been allowed to grow out and new trees, hedgerows and scrub having fully established and begun to mature.<br><br>The overall scene will be relatively well vegetated, with scattered and irregularly spaced trees, following the existing lines of both historic field boundaries and the road network as well as local watercourses.<br><br>This, together with the proposed mix of varied grasslands across the Site will help to somewhat reverse the over intensification of recent arable farming methods to create a much richer tapestry of habitats and features within the landscape. This varied development, set against the existing arable landscape will retain the overall perception of an open and expansive landscape but will appear as a more layered and cohesive scene across the Unwooded Vales and will help to integrate these with the ~~Wooded Vales~~ Vales to the west.<br><br>Following mitigation, the Site(s) are able accommodate change without undue adverse effects and there will be considerable beneficial effects in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area.<br><br>Within the Cottam 3b Site, the following mitigation will enhance the regional landscape character.<br><br>Considerable strengthening of the existing north/south field boundaries within the Site will strengthen the historical field pattern in this area.<br><br>New and enhanced hedgerows adjacent to the existing PRoW will alter the character of this walk from an exposed and open route to a more intimate and sheltered one.<br><br>Enhanced hedgerow management and planting along the eastern boundary of the Site from Blyton level | |

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| | | | crossing down to the South of the Site will augment this vegetated roadside planting.<br><br>Successional scrub planting along the railway line to the northern boundary of the Site will reinforce this landscape feature and provide biodiversity benefits.<br><br>By Year 15, the Site at Cottam 3a will present a 'well treed' landscape in line with the character area aims, the existing vegetation having been allowed to grow out and new trees, hedgerows and scrub having fully established and begun to mature.<br><br>The overall scene will be relatively well vegetated, with scattered and irregularly spaced trees, following the existing lines of both historic field boundaries and the road network.<br><br>This, together with the proposed mix of varied grasslands across the Site will help to somewhat reverse the over intensification of recent arable farming methods to create a much richer tapestry of habitats and features within the landscape. This varied development, set against the existing arable landscape will retain the overall perception of an open and expansive landscape but will appear as a more layered and cohesive scene across the Unwooded Vales. | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Medium | Very Low |
| **Level of Effect** | Neutral & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 3b Site) | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects upon LCA – 4a of the Cottam 3b Site and the other Cumulative Sites (Cottam 1, 2 and 3a) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, the segregated nature of the Sites; together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3b Site, cumulative visibility with the Cottam 1 Site/Sites, Cottam 2, and Cottam 3b Sites would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of intervisibility between Cottam 3a and 3b Site/Sites, extending from the:<br>• Northeast boundary of the Cottam 3a Site/Sites, defined to the west by the Green Respect Burial Park and Park House Farm, and reaching as far as Northorpe in the east<br>• East boundary of Cottam 3a Site/Sites, and stopping short of Cold Harbour Farm; and<br>• North boundary of the Cottam 3b Site/Sites, extending for a short distance as far as Grange Farm and Top Farm.<br><br>Potential cumulative visibility between the Cottam 3a and 3b Site/Sites would not be experienced however, due to the intervening vegetation bordering the mainline railway and the isolated settlement comprising Grange Farm and Top Farm. The flat landform and intervening woodland blocks, hedgerows and tree cover would also close down any inter-visibility across the landscape between these cumulative sites.<br><br>There are local patches of intervisibility between Cottam 3a, 3b and Cottam 2 Sites, extending from the:<br>• South boundary of the Cottam 3b Site, bordered by Pilham to the west and the medieval settlement of Dunstall to the east, and reaching as far as Springthorpe in the south<br>• South boundary of the Cottam 3a Site, bordered by the eastern edge of Blyton to the west, reaching Grange Farm and stopping short of the mainline railway; and<br>• North boundary of the Cottam 3a Site, following the alignment of the A159 (Laughton Road) and stopping short to the west of the Green Respect Burial Park.<br><br>Potential cumulative visibility between Cottam 3a, 3b and the Cottam 2 Sites would not be experienced however, due to the intervening settlements of Corringham, Yawthorpe, Aisby, Dunstall and Pilham. The flat landform and intervening vegetation cover would also close down any inter-visibility across the landscape between these cumulative sites.<br><br>There is a local patch of intervisibility between All Sites, located to the:<br>• East of the Cottam 3b Site and north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe. | *In Summary*<br>The Cumulative Effects upon LCA – 4a of the Scheme with the other Cumulative Developments is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a and 3b Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 3a Siteand Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3b Site would not alter the overall character of the landscape within the Unwooded Vales Character Area 4a. |

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| | Potential cumulative visibility between All Sites would not be experienced however, due to the intervening settlements of Corringham, Yawthorpe, Aisby, Dunstall and Pilham. The flat landform and intervening vegetation cover would also close down and inter-visibility across the landscape between these cumulative sites.<br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3b Site would not alter the overall character of the landscape within the Unwooded Vales Character Area 4a. | |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15: Beneficial & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales – Cable Route Corridor (Cottam 1 Site to Cottam 2 Site) |
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| **Receptor Baseline:**<br><br>Within the Cottam 1 Site/Sites to the Cottam 2 Site, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales also extend into the area/areas identified for the Cable Route Corridor and 0.5km from the outer boundary.<br><br>**Key Features:**<br><br>The landscape mainly comprises of productive arable and pastoral farmland, but there are areas of cereal and vegetable cropping where hedgerow removal has created some very large fields under single crop. Most of the Unwooded Vales retain a deeply rural and tranquil character, with farms and small nucleated villages located throughout areas of productive farmland, linked by narrow winding lanes and roads. Watercourses are often bordered by a narrow alluvial floodplain that wind through the landscape along shallow valleys, appearing little more than gentle folds in the landscape. This pattern of drainage is particularly evident along the course of the River Till between the settlement of Willingham by Stow, Kexby, Upton and Springthorpe. This area boasts an extensive network of tributaries of the River Till that are only discernable by the tracing of alder and willow trees, rusty pastures, and belts of riparian habitat across the landscape. There are localized concentrations of woodland cover to the east of Kexby, Upton and Springthorpe that include Fillingham Low Wood, Big Wood and Harpswell Wood, despite the overall tendency for limited woodland cover across the area.<br><br>**Character Context:**<br><br>This landscape character type offers expansive long-distance views from higher ground at the margin of the Vales that gives a sense of visual containment. Within this landscape character type there is limited woodland cover which is a heavy contrast to Wooded Vales landscape character type that is often seen close to Unwooded Vales. There are however localized concentrations of woodland. The landscape type hosts sparse small villages and dispersed farms such as Upton Grange, Turpin Farm and Low Farm all linked together with rural lanes. Key characteristics of the Unwooded Vales is that they are extensive, low lying rural landscape underlain by Triassic and Jurassic mudstone and clays and widespread superficial deposits that generally give rise to low, gently undulating landform which add to the intimacy of the landscape. Occasionally, these hills and ridges rise out of the Vales such as areas to the west of Glentworth, which rises to 30m AOD above the surrounding area. These ridges also mark the watersheds between watercourses since the landscape character type also hosts complex drainage patterns (River Till) of watercourses that flow within the shallow undulations often flanked by pasture and riparian habitats.<br><br>The Cottam 1 Site/Sites to Cottam 2 Site is primarily located within RLCT 4a: Unwooded Vales. The land area is found to the north of Glentworth Road and in the context of the settlements of Kexby, Upton and Springthorpe.<br><br>RLCT 4a: Unwooded Vales landscape character type is the primary host to the area/areas identified for the Cable Route Corridor and 0.5km from the outer boundary of the Cottam 1 Site/Sites to the Cottam 2 Site Cable Route Corridor.<br><br>RLCT 4a is considered to form part of the immediate landscape context for the Cottam 1 Site/Sites to the Cottam 2 Site Cable Route Corridor. |

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
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| In terms of forces for change, the Unwooded Vales aims to protect existing rural landscape features, in particular the restoration of hedgerows since the most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, increase in field size. The loss of pasture is particularly evident around settlements, where grazing animals and smaller field sizes contribute to the setting and structure of several villages. Many of the rural villages have not seen widespread expansion but development pressures continue with the demand for housing, commerce and industry creating visual intrusion and extending the urban fringe. For development associated with the rural villages, specific mechanisms include Village Design Statements, and tree planting around settlement fringes to help integrate new development into the landscape.<br><br>**Overall,** the susceptibility of the Unwooded Vales is conditioned by managing growth, ensuring development is appropriate in terms of type, scale and location. The flat, open landscape is also a key consideration and whilst the aim is to plan new tree planting around key settlements, woodland does not form a significant component of this landscape, and in considering its open and expansive character, extensive new woodland planting would be generally inappropriate.<br><br>The aims for the Unwooded Vales should be to plan new tree planting around key settlements and other suitable locations. Trees should be typically grouped in small plantations/copses or as individual trees within hedgerows. The creation of new hedgerows and permanent pasture along watercourses is also a priority, enhancing visibility of steams and dykes, whilst increasing the occurrence of semi- natural habitats. Although the remaining hedgerow network in generally strong, there is nevertheless evidence of decline in several areas, with gaps and few hedgerow trees. | *Scenic:* The Unwooded Vales appeal to the visual senses where the roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossings provide local points of interest and the opportunity to capture views across the landscape to the higher landform fringing the Vales,<br><br>*Cultural:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Thorpe le Fallows and Coates. The landscape surrounding these settlements retains a deeply rural and tranquil character with farms linked by minor lanes and roads. There are Roman roads such as Tillbridge Lane indicating that these low-lying areas provided convenient routes through the hills and wetlands.<br><br>*Natural:* The extensive expanses of semi-natural habitat, rivers, and streams are an important landscape feature such the River Till where the course can be observed by tracing sinuous belts of riparian habit and riverside trees, particularly within the area to the south of Ingham Road. Overall, in such a managed agricultural environment, networks of hedgerows and hedgerow trees gain significance in offering a refuge for birds and insects.<br><br>*Recreation and Enjoyment:* The Unwooded Vales are valued for recreation which is often focused on the locations where panoramic views are possible from elevated locations such as rising land at the edges of the Vales.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' with major landform features flanking the lower lying areas creating a broad scale visual containment along the ridgeline to the east at Cammeringham, Ingham and Fillingham. Wide panoramic views are also possible from the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Health and Wellbeing:* The Unwooded Vales provide a very limited network of PRoW leading to the dependence on the more direct arterial routes that run east to west across the area linked by a series of narrow straight lanes.<br><br>*Important Spatial Function:* The landscape benefits from high levels of visual containment despite the low levels of woodland cover. Instead, the local landform, hedgerows and shelter belts create visual containment and give the Vales Landscape an intimate character.<br><br>**Overall,** the value of the Unwooded Vales is shaped by the interruptions at bridge crossings that provide local points of interest and the opportunity to capture views across the landscape to higher landform fringing the Vales. In contrast, these lower lying areas support intact hedgerows and belts of riverside trees that truncate views. | *Character:* The interruptions at bridge crossings are a significant component of the landscape that provide local points of interest, and which are locally distinctive.<br><br>*Quality:* The extensive expanses of semi-natural habitat, rivers, and streams are an important landscape feature such the River Till where the course can be observed by tracing sinuous belts of riparian habit and riverside trees, which gives the area a positive character.<br><br>*Value:* Wide panoramic views are possible from the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Capacity:* The landscape has some vulnerability to unsympathetic development, but features are generally commonplace that could be readily replaced. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage |

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| However, there is significant benefit with appropriate tree planting that could be used in and around settlements to increase the occurrence of semi-natural habitats and maintain the perception of a 'well-treed' landscape. The relevant characteristics of the landscape therefore have a moderate ability to accommodate change without undue adverse effects.<br><br>Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpse of neighboring elevated lands is often sufficient to provide a sense of place and add to the recreation and enjoyment of the area. Typically, these locations occur around Thorpe le Fallows and Coates. | | | |
| Medium | Medium | **Medium** | **Not Applicable** |
| **Landscape Receptors – Cable Route Corridor (Cottam 1 Site/Sites to Cottam 2 Site)** | | | |
| The landscape and visual effects for the Cable Route Corridor (Cottam 1 Site/Sites to Cottam Power Station) Receptors are set out within the Viewpoint Receptor Sheets at **Appendix 8.3.2.3 [C6.3.8.2.3.]** and **Appendix 8.3.2.4 [C6.3.8.3.2.4]** the Residential Overview Sheets at **Appendix 8.3.3.1 [C6.3.8.3.3.1]** the Transport Overview Sheets at **Appendix 8.3.4.1 [C6.3.8.3.4.1]** and the PRoW Overview Sheets at **Appendix 8.3.5.1 [C6.3.8.3.5.1]**. | | | |

| **Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales – Cable Route Corridor (Cottam 1 Site to Cottam 2 Site)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects upon LCA – 4a of the Cable Route Corridor (Cottam 1 Site to Cottam 2 Site) with the other Cumulative Sites (Cottam 1, 2 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, the segregated nature of the Sites; together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. The effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the Cable Route Corridor between the Cottam 1 Site/Sites and the Cottam 2 Site, heading across the character area in a north south direction.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.2 [C6.4.8.15.1.2]** which shows that with the Cottam 2 Site, cumulative visibility with the Cottam 1 Site/Sites and Cottam 3a and 3b Sites would not be experienced across the entirety of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility. | *In Summary*<br>The Cumulative Effects upon LCA – 4a of the Scheme with the other Cumulative Developments is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. The effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the Cable Route Corridor between the Cottam 1 Site/Sites to the Cottam 2 Site, heading in a north south direction.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that within the Cable Route Corridor, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cable Route Corridor and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6]** |

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| | There are local patches of intervisibility between the Cottam 2 Site and with the Cottam 3a and 3b Sites extending from the:<br>• South boundary of the Cottam 2 Site, starting at the eastern edge of Corringham and reaching as far as Yawthorpe Beck and Yawthorpe<br><br>The Land Use, Topography and Watercourses, Communications and Infrastructure, Settlements, Industry, Commerce and Leisure, Nationally and Locally Designated Landscapes, Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens and Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>There is a local patch of intervisibility between the Cottam 2 Site and with the Cottam 3b Site, comprising the:<br>• Southeast of the River Eau, extending as far as Huckerby Farm and Huckerby Bungalows.<br><br>The Land Use, Topography and Watercourses, Communications and Infrastructure, Settlements, Industry, Commerce and Leisure, Nationally and Locally Designated Landscapes, Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens and Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility<br><br>There are local patches of intervisibility between All Sites comprising the:<br>• North of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe<br><br>The Land Use, Topography and Watercourses, Communications and Infrastructure, Settlements, Industry, Commerce and Leisure, Nationally and Locally Designated Landscapes, Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens and Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cable Route Corridor (CPS to the Cottam 1 Site/Sites) would not alter the overall character of the landscape within the Unwooded Vales Character Area 4a. | **Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8]**<br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.9]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The minor patches of cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape within the Unwooded Vales Character Area. |
| **Magnitude** | Construction: Low | Construction: Low |

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| | Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Neutral & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation**:** Neutral & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation**:** Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales – Cable Route Corridor (Cottam 2 Site to Cottam 3a and 3b Sites) |
|---|
| **Receptor Baseline:**<br><br>Within Cottam 2 Site to Cottam 3 Site, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extend into the area/areas identified for the Cable Route Corridor and 0.5km from the outer boundary.<br><br>**Key Features:**<br><br>The landscape mainly comprises of productive arable and pastoral farmland, but there are areas of cereal and vegetable cropping where hedgerow removal has created some very large fields under single crop. Most of the Unwooded Vales retain a deeply rural and tranquil character, with farms and small nucleated villages located throughout areas of productive farmland, linked by narrow winding lanes and roads. Watercourses are often bordered by a narrow alluvial floodplain that wind through the landscape along shallow valleys, appearing little more than gentle folds in the landscape. This pattern of drainage is particularly evident along the course of the River Till between the settlements of Corringham, Pilham and Blyton. This area boasts an extensive network of tributaries of the River Till that are only discernable by tracing alder and willow trees, rusty pastures, and belts of riparian habitat across the landscape. There are very few concentrations of woodland cover limited to only Yawthorpe Fox Covert and Blyborough Covert which reflects the overall tendency for limited woodland cover across the area.<br><br>**Character Context:**<br><br>This landscape character type offers expansive long-distance views from higher ground at the margin of the Vales that gives a sense of visual containment. Within this landscape character type there is limited woodland cover which is a heavy contrast to Wooded Vales landscape character type that is often seen close to Unwooded Vales. There are very few localized concentrations of woodland. The landscape type hosts sparse small villages such as Pilham, Aisby and Yawthorpe and dispersed farms all linked together with rural lanes. Key characteristics of the Unwooded Vales is that it is an extensive, low lying rural landscape underlain by Triassic and Jurassic mudstone and clays and widespread superficial deposits that generally give rise to low, gently undulating landform which add to the intimacy of the landscape. Occasionally, these hills and ridges rise out of the Vales such as areas to the west of Corringham, which rises to 30m AOD above the surrounding area and is the site of windmills. These ridges also mark the watersheds between watercourses since the landscape character type also hosts complex drainage patterns (River Till) of watercourses that flow within the shallow undulations often flanked by pasture and riparian habitats.<br><br>Cottam 2 Site to Cottam 3a and 3b Sites is primarily located within RLCT 4a: Unwooded Vales. The land area is found to the north of the A631 (Corringham Road) and in the context of the settlements of Coringham, Aisby and Pilham.<br><br>RLCT 4a: Unwooded Vales landscape character type is the primary host to the area/areas identified for the Cable Route Corridor and 0.5km from the outer boundary of Cottam 2 Site to Cottam 3a and 3b Sites<br><br>RLCT 4a is considered to form part of the immediate landscape context for the Cottam 2 Site to Cottam 3a and 3b Sites Cable Route Corridor. |

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change, the Unwooded Vales aims to protect existing rural landscape features, in particular the restoration of hedgerows since the most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, and increase in field size. The loss of pasture is particularly evident around settlements, where grazing animals and smaller field sizes contribute to the setting and structure of several villages. Many of the rural villages have not seen widespread expansion but development pressures continue with the demand for housing, commerce and industry creating visual intrusion.<br><br>**Overall,** the susceptibility of the Unwooded Vales is conditioned by managing growth, ensuring development is appropriate in terms of type, scale, and location. The flat, open landscape is also a key consideration and whilst the aim is to plan new tree planting around key settlements, woodland does not form a significant component of this landscape, and in considering its open and expansive character, extensive new woodland planting would be generally inappropriate.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies.<br><br>The aims for the Unwooded Vales should be to plan new tree planting around key settlements and other suitable locations. Trees should be typically grouped in small plantations/copses or as individual trees within hedgerows. The creation of new hedgerows and permanent pasture along watercourses is also a priority, enhancing visibility of steams and dykes, whilst | *Scenic:* The Unwooded Vales appeal to the visual senses where the roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossing provide local points of interest and the opportunity to capture views across the landscape.<br><br>*Cultural:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Aisby, Corringham and Pilham. The landscape surrounding these settlements retain a deeply rural and tranquil character with farms linked by minor lanes and roads. There are Roman roads such as Tillbridge Lane indicating that these low-lying areas provided convenient routes through the hills and wetlands.<br><br>*Natural:* The extensive expanses of semi-natural habitat, rivers and streams are an important landscape feature such as the River Till where the course can be observed by tracing sinuous belts of riparian habit and riverside trees, particularly within the area to the south of Ingham Road. Overall, in such a managed agricultural environment, networks of hedgerows and hedgerow trees gain significance in offering a refuge for birds and insects.<br><br>*Recreation and Enjoyment:* The Unwooded Vales are valued for recreation which is often focused on the locations where panoramic views are possible from elevated locations such as from rising land at the edges of the Vales.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' with major landform features flanking the lower lying areas creating broad scale visual containment along the ridgeline to the southeast at Cammeringham, Ingham and Fillingham. Wide panoramic views are also possible from the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Health and Wellbeing:* The Unwooded Vales provide a very limited network of PRoW leading to the dependence on the more direct arterial routes that run east to west across the area linked by a series of narrow straight lanes.<br><br>*Important Spatial Function:* The landscape benefits from high levels of visual containment despite the low levels of woodland cover. Instead, the local landform, hedgerows and shelter belts create visual containment and give the Vales Landscape an intimate character.<br><br>**Overall**, the value of the Unwooded Vales is shaped by the historic settlement with farms, nucleated villages, and small hamlets such as Aisby, Corringham and Pilham. In contrast, the most widespread change has been in agricultural intensification from pastoral to arable cropping that has resulted in an open and expansive character. | *Character:* The roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossing provide local points of interest and the opportunity to capture views across the landscape.<br><br>*Quality*: The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Aisby, Corringham and Pilham. The landscape surrounding these settlements retain a deeply rural and tranquil character.<br><br>*Value:* Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpse of neighboring elevated landscape is often sufficient to provide a sense of place and add to the recreation and enjoyment of the area.<br><br>*Capacity:* The most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, and increase in field size, which affects the capacity of the landscape to absorb change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing. |

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| increasing the occurrence of semi- natural habitats. Although the remaining hedgerow network in generally strong, there is nevertheless evidence of decline in several areas, with gaps and few hedgerow trees.<br><br>However, there is significant benefit with appropriate tree planting that could be used in and around settlements to increase the occurrence of semi-natural habitats and maintain the perception of a 'well-treed' landscape. The relevant characteristics of the landscape therefore have a moderate ability to accommodate change without undue adverse effects.<br><br>Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpse of neighboring elevated lands is often sufficient to provide a sense of place and add to the recreation and enjoyment of the area. Typically, these locations occur around Thorpe le Fallows and Coates. | | | |
| Medium | Medium | **Medium** | **Not Applicable** |

| **Landscape Receptors – Cable Route Corridor (Cottam 1 Site/Sites to Cottam 2 Site)** |
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| The landscape and visual effects for the Cable Route Corridor (Cottam 1 Site/Sites to Cottam Power Station) Receptors are set out within the Viewpoint Receptor Sheets at **Appendix 8.3.2.3 [C6.3.8.2.3.]** and **Appendix 8.3.2.4 [C6.3.8.3.2.4]** the Residential Overview Sheets at **Appendix 8.3.3.1 [C6.3.8.3.3.1]** the Transport Overview Sheets at **Appendix 8.3.4.1 [C6.3.8.3.4.1]** and the PRoW Overview Sheets at **Appendix 8.3.5.1 [C6.3.8.3.5.1]**. |

| **Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales – Cable Route Corridor (Cottam 2 Site to Cottam 3a and 3b Sites)** | | |
|---|---|---|
| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects upon LCA – 4a of the Cable Route Corridor (Cottam 2 Site to Cottam 3a and 3b Sites) with the other Cumulative Sites (Cottam 1, 2 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, the segregated nature of the Sites; together with the existing landscape character associated with the fabric of the landscape of the Sites and Study AreaThe effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the Cable Route Corridor connecting between the Cottam 2 Cottam 3a and 3b Sites, extending across the character area in a north south direction.<br><br>*Aesthetic Aspects of the Landscape* | *In Summary*<br>The Cumulative Effects upon LCA – 4a of the Scheme with the other Cumulative Developments is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. The effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the Cable Route Corridor connecting between the Cottam 2 and Cottam 3a and 3b Sites, extending across the character area in a north south direction.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.2 [C6.4.8.15.2.2]** and **8.15.2.3 [C6.4.8.15.2.3]** which shows that with the Cable Route Corridor, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to |

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| | Refer to **Figure 8.15.1.2 [C6.4.8.15.1.2]** which shows that within the Cable Route Corridor, cumulative visibility with the Cottam 2 and Cottam 3a and 3b Sites would be experienced across the majority of the 0.5km study area. This cumulative visibility is unlikely to be experienced however due to the distance, the intervening woodlands, hedgerows and tree cover between the Cable Route Corridor and the Site/Sites. The intervening settlements of Aisby and Pilham and other built form associated with the isolated dwellings and farmsteads would also curtail cumulative visibility.<br><br>There are very minor patches of cumulative intervisibility where All Sites would be theoretically visible:<br>• North of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cable Route Corridor (Cottam 2 to Cottam 3a and 3b) would not alter the overall character of the landscape within the Unwooded Vales Character Area 4a. | the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cable Route Corridor and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The minor patches of cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape within the Unwooded Vales Character Area. |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Neutral & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Neutral & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

| Landscape Receptor – Regional Scale Landscape Character – 3a: Floodplain Valleys - Cable Route Corridor (Cottam 1 Site/Sites to Cottam Power Station) |
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**Receptor Baseline:**

Within Cottam Power Station to the Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 3a Floodplain Valleys, which is shown on **Figure 8.5 [C6.4.8.5]**. Floodplain Valleys extend into the area/areas identified for the Cable Route Corridor and 0.5km from the outer boundary. The Floodplain Valleys mainly occur to the west of a group of settlements that extend south from Gainsborough and include Lea, Knaith, Gate Burton, Marton, Brampton and Torksey.

**Key Features:**

The land within the Floodplain Valleys is only a very small parcel of land that is generally sloping towards the west and the river Trent, with levels ranging from approximately 10m AOD to the eastern edge of the character area and falling to approximately 2m AOD at the edge of the river Trent corridor. The Floodplain Valleys comprises of permanent pasture on riverside meadows and arable fields on the drier gravel terraces. Key characteristics of the Floodplain Valleys are deep alluvium and gravel deposits that mask underlying bedrock geology to create wide, flat alluvial floodplains surrounded by rising landform of adjacent Landscape Character Types. Hedgerow and riverside trees are also an important component of the landscape within this character type where Alder, Willow and Poplar are typical riverside trees and there are swathes of riverine woodland lining the river corridor, particularly the sharp 'U' bend in the river at Trent Port. Sewage treatment works and power stations are common close to larger settlements that fringe the floodplains with the nearest being Cottam Power Station to the southwest of the Cottam 1 Site/Sites. Most of the East Midlands region's major towns are located adjacent to the floodplains and have a strong but localized influence on their character. In other places, the floodplains constitute some of the most remote and peaceful terrestrial lowland areas in the East Midlands. The landscape around Marton shows the influence of settlement through the presence of a strategic road network, which exerts a strong influence on local character. In contrast, there are also areas where the open, unsettled character of the landscape is easily recognizable, creating a distinct 'sense of place'.

**Character Context:**

Cottam Power Station to the Cottam 1 Site/Sites is mainly located within RLCT 4a: Unwooded Vales, apart from the area to the west of the A156 (Lincoln Road) which falls within RLCT 3a: Floodplain Valleys. Whilst the floodplains themselves are generally devoid of settlement, the rivers and neighboring gravel terraces have been a focus for settlement for several thousands of years. The land within the Floodplain Valleys borders areas defined as 'Built Up Area' which is associated with the settlements of Marton and Torksey. This landscape character type that are located adjacent to floodplains where the bordering settlement on higher ground exerts a strong but localized influence on their character. This landscape character type has limited woodland cover; however, steep riverside bluffs, areas close to settlement or on a tight bend in the river are notable for a higher level of vegetation cover. This is typically evident around the settlements of Marton, Trent Port, Cottam and Torksey. Historically, the floodplains would have shared common land use characteristics with a predominance of permanent pasture on riverside meadows and arable fields on drier gravel terraces and this is evident in the landscape around Marton where there is a mixture of pasture and arable land use adjacent to the river corridor.

RLCT 3a: Floodplain Valleys landscape character type is host to the area/areas identified for the Cable Route Corridor and 0.5km from the outer boundary of the Cottam Power Station to the Cottam 1 Site/Sites.

RLCT 3a is considered to form part of the immediate landscape context for the Cottam Power Station to the Cottam 1 Site/Sites.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change, the Floodplain Valleys aims to protect the open and unsettled character of the landscape from inappropriate development and that tree planting around settlement fringes can help with integration and help contribute to the overall perception of a well treed landscape. The changes from flood risk and engineered solutions are also changing the landscape, but there is potential for landscape restoration projects to assist with mitigation of this change. The potential for river landscape to change is also a key consideration, but there is potential to introduce positive landscape interventions such as biodiversity and nature conservation initiatives.<br><br>**Overall,** the susceptibility of the Floodplain Valleys is conditioned by several key forces for change that have the potential to shape the future of the landscape. These include the impact of settlement on the edges of the river floodplain, the interventions associated with flood risk, the shifting of river channels, sand and gravel extraction and power and energy infrastructure. There are however also significant benefits to be gained from a range of landscape and biodiversity interventions.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies.<br><br>The aim of the Floodplain Valleys should be to plant small-scale woodlands and linear riverine belts of planting or associated with lakes and pools within the pastoral floodplain with larger scale farm woods with more open agricultural landscapes. Limited native tree planting may also be appropriate. | *Scenic:* The Floodplain Valleys appeal to the visual senses in that vast stretches of the floodplain retain an intact and traditional character, despite the intrusion from sand and gravel extraction and power and energy infrastructure.<br><br>*Cultural:* The landscape shows evidence of archaeology and built heritage particularly where there are road crossings over the river or views to farms and villages on drier, more elevated land. Marton is typical of the many settlements in the floodplain that are linear, stretching out along roads parallel to the main river channel.<br><br>*Natural:* There are extensive expanses of semi-natural habitat along the river corridor including permanent grazing land interspersed with meandering river channels fringed by riparian habitats and riverside trees. Several former mineral sites are designated as Sites of Special Scientific Interest (SSSI).<br><br>*Recreation and Enjoyment:* The Floodplain Valleys are valued for recreation and whilst there is a marked contrast between areas that remote, other areas close to settlements such Marton and Gate Burton have access to the floodplain landscape including core paths such as the Trent Valley Way.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' in that field patterns are largely geometric with the pattern breaking down in some places to create large areas of farmland.<br><br>*Health and Wellbeing:* The floodplain landscape provides facilities that are well-used and valued by local communities and visitors including for informal recreation and nature, notably for overwintering birds.<br><br>*Important Spatial Function:* The Floodplain Valleys are host to numerous gateways established at strategic river crossings where settlement is typically located at the edge of the floodplain with riverside settlements. Marton is typically a gateway settlement with historic origins including the Grade I Listed Church of St Margaret of Antioch. The Grade II* Listed Viaduct over River Trent was completed in 1849 and designed to span the river Trent and its flood plain.<br><br>**Overall,** the value of the Floodplain Valleys is shaped by the unsettled character of a landscape that is competing with the impact of settlement on the edges of the river floodplain. The cultural associations linked to the river corridor as a historic crossing point are a key consideration in terms of the value of this landscape character type. | *Character:* There would generally be described as unique where vast stretches of floodplain retain an intact and traditional character.<br><br>*Quality:* Areas have a positive landscape character with elements that would have a medium tolerance to change such as the unsettled character of the landscape that is competing with the impact of settlement on the edges of the floodplain.<br><br>*Value:* The floodplain landscape provides facilities that are well-used and valued by local communities and visitors including for informal recreation and nature, notably for overwintering birds.<br><br>*Capacity:* The remote areas have some vulnerability to unsympathetic development, but most landscape features are commonplace that could be readily replicated. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |

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| The visual intrusion from sand and gravel extraction is also a recognised feature of the landscape, but in producing restoration plans there is an opportunity to maximize biodiversity benefits. The impact on long distance views from surrounding towns and villages is also a key consideration.<br>Historic sites include mill sites and races and canalized sections of rivers and associated locks and sluices. There are also strong cultural associations at Torksey, including the Grade II Listed Torksey Lock and Footbridge and Grade I Listed Torksey Castle. | | | |
| Medium | Medium | **Medium** | **Not Applicable** |

| **Landscape Receptors – Cable Route Corridor (Cottam 1 Site/Sitesto Cottam Power Station)** |
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| The landscape and visual effects for the Cable Route Corridor (Cottam 1 Site/Sites to Cottam Power Station) Receptors are set out within the Viewpoint Receptor Sheets at **Appendix 8.3.2.3 [C6.3.8.2.3.]** and **Appendix 8.3.2.4 [C6.3.8.3.2.4]** the Residential Overview Sheets at **Appendix 8.3.3.1 [C6.3.8.3.3.1]** the Transport Overview Sheets at **Appendix 8.3.4.1 [C6.3.8.3.4.1]** and the PRoW Overview Sheets at **Appendix 8.3.5.1 [C6.3.8.3.5.1]**. |

| **Landscape Receptor – Regional Scale Landscape Character – 3a: Floodplain Valleys - Cable Route Corridor (Cottam 1 Site to Cottam Power Station)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects upon LCA – 3a of the Cable Route Corridor (Cottam 1 Site to Cottam Power Station) with the other Cumulative Sites (Cottam 1, 2 and 3a and 3b) is Negligible at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, the segregated nature of the Sites; together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. The effects upon landscape character are unchanged.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the Cable Route Corridor between Cottam Power Station (CPS) and the Cottam 1 Site/Sites extending across the character area in an east west direction and then heading south to link into the Cottam Power Station.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.1 [C6.4.8.15.1.1]** which shows that within the Cable Route Corridor (CPS to Cottam 1 Site/Sites), cumulative visibility with the Cottam 1 Site/Sites, Cottam 2, and Cottam 3a and 3b Sites would not be experienced across the majority of the 0.5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br>There are very minor patches of cumulative intervisibility within the Cable Route Corridor.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]** | *In Summary*<br>The Cumulative Effects upon LCA – 3a of the Scheme with the other Cumulative Developments is Negligible at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. The effects upon landscape character are unchanged.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the Cable Route Corridor between the Cottam Power Station (CPS) and the Cottam 1 Site/Sites, heading north as a link from the CPS then extending across the character area in an east west direction.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that within the Cable Route Corridor, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cable Route Corridor and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6]**<br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8]**<br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.9]**<br><br>*Overall Landscape Character of the Floodplain Valleys* |

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| | **Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Floodplain Valleys*<br>Overall, the character of the Floodplain Valleys is shaped by is shaped by the unsettled character of a landscape that is competing with the impact of settlement on the edges of the river floodplain. The cultural associations linked to the river corridor as a historic crossing point are a key consideration in terms of the value of this landscape character type. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The very minor patches of cumulative visibility for the Cable Route Corridor would not alter the overall character of the landscape within the Floodplain Valleys Character Area 3a. | Overall, the character of the Floodplain Valleys is shaped by is shaped by the unsettled character of a landscape that is competing with the impact of settlement on the edges of the river floodplain. The cultural associations linked to the river corridor as a historic crossing point are a key consideration in terms of the value of this landscape character type. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The very minor patches of cumulative visibility for the Cable Route Corridor would not alter the overall character of the landscape within the Floodplain Valleys Character Area 3a. |
| **Magnitude** | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1): **with only** Embedded Mitigation: Very Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1): **with only** Embedded Mitigation: Very Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Neutral & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Neutral & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Negligible **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Negligible **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

**Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales – Cable Route Corridor (Cottam Power Station to Cottam 1 Site)**

**Receptor Baseline:**

Within Cottam Power Station (CPS) to Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extend into the area/areas identified for the Cable Route Corridor and 0.5km from the outer boundary.

**Key Features:**

The landscape mainly comprises of productive arable and pastoral farmland, but there are areas of cereal and vegetable cropping to the east of Willingham by Stow around Stone Pit Lane where hedgerow removal has created some very large fields under single crop. Most of the Unwooded Vales retain a deeply rural and tranquil character, with farms and small nucleated villages located throughout areas of productive farmland, linked by narrow winding lanes and roads. Watercourses are often bordered by a narrow alluvial floodplain that wind through the landscape along shallow valleys, appearing little more than gentle folds in the landscape. This pattern of drainage is particularly evident between the settlement of Coates and Normanby by Stow and Willingham by Stow to the west of the Cottam 1 Site/Sites. This area boasts an extensive network of field drains including tributaries of the River Till that are only discernable by tracing alder and willow trees, rusty pastures, and belts of riparian habitat across the landscape. There are localized concentrations of woodland cover between Coates and Willingham by Stow that include Normanby Gorse and New Plantation, despite the overall tendency for limited woodland cover across the area.

**Character Context:**

This landscape character type offers expansive long-distance views from higher ground at the margin of the Vales that gives a sense of visual containment. Within this landscape character type there is limited woodland cover which is a heavy contrast to Wooded Vales landscape character type that is often seen close to Unwooded Vales. There are however localized concentrations of woodland cover to the northeast of Thorpe le Fallows including Brattleby Thorns, Brattleby Gorse, Beck Spinney, Horse Covert and Poplar Wood. The landscape type hosts sparse small villages and dispersed farms all linked together with rural lanes. Key characteristics of the Unwooded Vales is that they are extensive, low lying rural landscape underlain by Triassic and Jurassic mudstone and clays and widespread superficial deposits that generally give rise to low, gently undulating landform which add to the intimacy of the landscape. Occasionally, these hills and ridges rise out of the Vales such as Thorpe le Fallows, which rises to 10m AOD above the surrounding area. These ridges also mark the watersheds between watercourses since the landscape character type also hosts complex drainage patterns (River Till) of watercourses that flow within the shallow undulations often flanked by pasture and riparian habitats.

Cottam Power Station to the Cottam 1 Site/Sites is mainly located within RLCT 4a: Unwooded Vales, apart from the area to the west of the A156 (Lincoln Road) which falls within RLCT 3a: Floodplain Valleys. The land area is found to the north and south of Ingham Road and in the context of the settlements of Coates, Thorpe in the Fallows, Sturton by Stow, Bransby, Kexby, Willingham by Stow, Normanby by Stow and Stow.

RLCT 4a: Unwooded Vales landscape character type is main host to the area/areas identified for the Cable Route Corridor and 0.5km from the outer boundary of the Cottam Power Station to Cottam 1 Site/Sites.

RLCT 4a is considered to form part of the immediate landscape context for the Cottam Power Station to Cottam 1 Site/Sites.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change, the Unwooded Vales aims to protect existing rural landscape features, in particular the restoration of hedgerows since the most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, increase in field size. The loss of pasture is particularly evident around settlements, where grazing animals and smaller field sizes contribute to the setting and structure of several villages. Many of the rural villages have not seen widespread expansion but development pressures continue with the demand for housing, commerce and industry creating visual intrusion.<br><br>**Overall,** the susceptibility of the Unwooded Vales is conditioned by managing growth, ensuring development is appropriate in terms of type, scale, and location. The flat, open landscape is also a key consideration and whilst the aim is to plan new tree planting around key settlements, woodland does not form a significant component of this landscape, and in consideration of its open and expansive character, extensive new woodland planting would be inappropriate.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies.<br><br>The aims for the Unwooded Vales should be to plan new tree planting around key settlements and other suitable locations. Trees should be typically grouped in small plantations/copses or as individual trees within hedgerows. The creation of new hedgerows and permanent pasture along watercourses is also a priority, enhancing visibility of streams and dykes, whilst increasing the occurrence of semi- | *Scenic:* The Unwooded Vales appeal to the visual senses where the roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossing provide local points of interest and the opportunity to capture views across the landscape to the higher landform fringing the Vales,<br><br>*Cultural:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Thorpe le Fallows and Coates. The landscape surrounding these settlements is shaped by farms linked by minor lanes and roads.<br><br>*Natural:* The extensive expanses of semi-natural habitat, rivers and streams are an important landscape feature such as the River Till where the course can be observed by tracing sinuous belts of riparian habit and riverside trees, particularly within the area to the south of Ingham Road.<br><br>*Recreation and Enjoyment:* The Unwooded Vales are valued for recreation where panoramic views are possible from elevated locations from rising land at the edges of the Vales. Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpses of neighboring elevated lands are often sufficient to provide a sense of place and add to the recreation and enjoyment of the area. Typically, these locations occur around Thorpe le Fallows and Coates.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' with major landform features flanking the lower lying areas creating broad scale visual containment along the ridgeline to the east at Cammeringham, Ingham and Fillingham. Wide panoramic views are also possible from the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Health and Wellbeing:* The Unwooded Vales provide a very limited network of PRoW leading to the dependence on the more direct arterial routes that run east to west across the area linked by a series of narrow straight lanes.<br><br>*Important Spatial Function:* The landscape benefits from high levels of visual containment despite the low levels of woodland cover. Instead, the local landform, hedgerows and shelter belts create visual containment and give the Vales Landscape an intimate character.<br><br>**Overall,** the value of the Unwooded Vales is shaped by its visual senses where roads and watercourses combine to give a subtle grain to the landscape. In contrast, the Roman roads that pass across the area stimulate development pressures that continue with the demand for housing, commerce, and industry in these parts. | *Character:* The roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossing provide local points of interest and the opportunity to capture views across the landscape.<br><br>*Quality:* Agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, increase in field size. The loss of pasture is evident around settlements. Overall, the networks of hedgerows and hedgerow trees gain significance in offering a refuge for birds and insects.<br><br>*Value:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Thorpe le Fallows and Coates. The landscape surrounding these settlements retain a deeply rural and tranquil character. There are Roman roads that pass across the area such as Tillbridge Lane indicating that these low-lying areas provided convenient routes through the hills and wetlands.<br><br>*Capacity:* Some scope for landscape change since the landscape benefits from high levels of visual containment due to the local landform, hedgerows, and shelterbelts. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |

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| natural habitats. Although the remaining hedgerow network is generally strong, there is nevertheless evidence of decline in several areas, with gaps and few hedgerow trees.<br><br>For development associated with the rural villages, specific mechanisms include Village Design Statements, and tree planting around settlement fringes to help integrate new development into the landscape.<br><br>However, there is significant benefit with appropriate tree planting that could be used in and around settlements to increase the occurrence of semi-natural habitats and maintain the perception of a 'well-treed' landscape. The relevant characteristics of the landscape therefore have a moderate ability to accommodate change without undue adverse effects.<br><br>In recent decades, the productivity of the land and change to arable cropping has stimulated widespread change in the rural landscape. | | | |
| Medium | Medium | **Medium** | **Not Applicable** |

| **Landscape Receptors – Cable Route Corridor (Cottam 1 Site/Sites to Cottam Power Station)** |
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| The landscape and visual effects for the Cable Route Corridor (Cottam 1 Site/Sites to Cottam Power Station) Receptors are set out within the Viewpoint Receptor Sheets at **Appendix 8.3.2.3 [C6.3.8.2.3.]** and **Appendix 8.3.2.4 [C6.3.8.3.2.4]** the Residential Overview Sheets at **Appendix 8.3.3.1 [C6.3.8.3.3.1]** the Transport Overview Sheets at **Appendix 8.3.4.1 [C6.3.8.3.4.1]** and the PRoW Overview Sheets at **Appendix 8.3.5.1 [C6.3.8.3.5.1]**. |

| **Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales – Cable Route Corridor (Cottam Power Station to Cottam 1 Site)** | | |
|---|---|---|
| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects upon LCA – 4a of the Cable Route Corridor (Cottam Power Station to Cottam 1 Site) with the other Cumulative Sites (Cottam 1, 2 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, the segregated nature of the Sites; together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. The effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the Cable Route Corridor between the Cottam Power Station (CPS) and the Cottam 1 Site/Sites, heading north as a link from the CPS then extending across the character area in an east west direction.<br><br>*Aesthetic Aspects of the Landscape* | *In Summary*<br>The Cumulative Effects upon LCA – 4a of the Scheme with the other Cumulative Developments is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. The effects upon landscape character are reduced.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the Cable Route Corridor between the Cottam Power Station (CPS) and the Cottam 1 Site/Sites, heading north as a link from the CPS then extending across the character area in an east west direction.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that within the Cable Route Corridor, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the |

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| | Refer to **Figure 8.15.1.1 [C6.4.8.15.1.1]** which shows that within the Cable Route Corridor, cumulative visibility with the Cottam 1 Site/Sites, Cottam 2, and Cottam 3a and 3b Sites would not be experienced across the majority of the 0.5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are very minor patches of cumulative intervisibility towards the southern part of the study area, comprising the area/s:<br>• west of Sturton by Stow, extending from Marton Road in the south as far as Normanby by Stow in the north.<br><br>There are very minor patches of cumulative intervisibility towards the western part of the study area, comprising the area/s:<br>• northeast of Marton, to the south of Clay Lane.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cable Route Corridor (CPS to the Cottam 1 Site/Sites) would not alter the overall character of the landscape within the Unwooded Vales Character Area 4a. | distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cable Route Corridor and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6]**<br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8]**<br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.9]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The minor patches of cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape within the Unwooded Vales Character Area. |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Neutral & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Neutral & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): **without** Mitigation Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

| Landscape Receptor – Land Use (Cottam 1 Site/Sites) |
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**Receptor Baseline:**

Within the Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**.

The Site/Sites within Cottam 1 (2km Study Area) can be sub-divided into two distinct land areas:

- Cottam 1 North
- Cottam 1 South

**Key Features:**

The adjoining escarpment of the Lincolnshire Edge defines this low-lying landscape to the east, this is an important Land Use feature for both Cottam 1 North and South Sites.

Cottam 1 North:
The landscape mainly comprises a land use of open arable and pastoral farmland, but there are areas of cereal and vegetable cropping to the east of Willingham by Stow, particularly around Stone Pit Lane where hedgerow removal has created some very large fields under single crop. A collection of larger field systems are also found, further west, to the south of Willingham Road, which are mainly located to the east of Larch Plantation and New Plantation. These larger field systems are regular and geometric in pattern, some of which are divided by ditches and dykes. In contrast, there are smaller scale field systems to the east of Stow Road and Normanby Road where the landscape is more pastoral with thickly hedged fields, and small tributaries of the River Till form crossing points at the junction with the local lanes. There are fewer watercourses to the east of the area around Coates as this is where the landscape becomes more elevated towards the distinct Jurassic Limestone Scarp slope that runs north from Lincoln. Long, straight roads are mainly absent from this area, apart from Ingham Road, and many take a right angle turn or lead into smaller tracks where they reach their destination at isolated dwellings or farmsteads. Settlement pattern is nucleated, mainly comprising Willingham by Stow and Kexby to the west and Glentworth and Fillingham to the east.

Cottam 1 South:
The landscape mainly comprises of larger field systems that are regular and geometric in pattern, except where they are dissected by the meandering alignment of the River Till. A smaller number of fields are divided by ditches and dykes, relative to the Cottam 1 North Site, but are fields remain separated by hedgerows with trees. There are fewer minor tributaries of the River Till in this area, relative to the Cottam 1 North Site and the small number of drainage ditches that do feed into the River Till mainly follow a straight alignment running in an east to west direction. The landscape is also punctuated by small roads running in a predominantly east west orientation across the landscape. These long, straight roads are more abundant in this area, relative to the Cottam 1 North Site and many are bordered by isolated farmsteads and residential dwellings, often with mown grass verges that add elements of domestic character to these lanes. Settlement pattern to the east of the Cottam 1 South Site includes Ingham, Cammeringham and Brattleby. Woodland is mainly concentrated to the west of Cammeringham and Brattleby and includes geometric shaped shelterbelts and woodland plantations consisting of predominantly native species with large polpar specimens in shelterbelts.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change for Cottam 1 Site/Sites Land Use, recent trends have shown that poor hedgerow condition is commonplace across the area with hedgerows often excessively trimmed and gappy and that few surviving trees are in poor condition. There has also been a steady decline in permanent pasture and conversion to arable uses. In terms of settlement, the road networks across the area have included the construction of bridges, embankments, roundabouts, and associated infrastructure has resulted in increased connectivity across the area adding to further noise and visual intrusion on the lowland areas that are located between these major routes, due to increased traffic movements.<br><br>**Overall,** the susceptibility of the Land Use for the Cottam 1 Site/Sites is conditioned by the need to conserve rural settlement pattern and ensuring that new development is complimentary to intrinsic local character. The aim is to ensure that new developments are integrated well with adequate, well-designed, green infrastructure since the areas of semi-natural habitat are very limited and fragmented. Hedgerow quality tends to be low – often tightly trimmed, gappy and species-poor. However, there are significant opportunities to restore and manage hedgerows, where they have been lost and enhance tree cover. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects given there is scope to restore the habitats and landscape features that have been lost through agricultural intensification. | *Scenic:* Agriculture is the dominant land use, with most of the land being used for growing cereals, oilseeds, and other arable crops. The landscape reveals views of an open nature beneath vast skies that are often extensive and uninterrupted.<br><br>*Cultural:* A predominantly rural and sparsely settled area with small villages and dispersed farms and residential dwellings linked by long straight roads and a network of minor tracks which follow the geometric field patterns.<br><br>*Natural:* Very little semi-natural habitat remains across the area, apart from habitat associated with the River Till and its tributaries, which provides a strong feature running through the landscape.<br><br>*Recreation and Enjoyment:* The public right of way (PRoW) network is limited apart from a few north south routes that connect between the long straight roads running east to west across the area.<br><br>*Local Distinctiveness and Sense of Place:* A regular pattern of medium to large fields are enclosed by hawthorn hedges and ditches dominate the landscape. A simple palette of land uses and low-lying terrain gives visual unity and a strong sense of identity.<br><br>*Health and Wellbeing:* There is a strong sense of remoteness, due to the area being in expansive agriculture with medium to large scale field systems. Access to these remote areas is mainly confined to the long, straight roads since PRoW connections are limited across the area.<br><br>*Important Spatial Function:* The predominance of large-scale agriculture and limited settlement and development provides an important spatial function centered within a landscape to the east of the River Trent.<br><br>**Overall**, the value of the Land Use for the Cottam 1 Site/Sites is shaped by this being an extensive low-lying landscape with relatively limited woodland cover, where shelterbelts and hedgerow trees gain greater visual significance as a result. As the area has been extensively farmed over a long period, very little semi-natural habitat remains, and the agricultural intensification has diminished the 'sense of place' in parts. This has included drainage of flood plains, conversion of pasture to arable, removal of hedgerows, loss of old farm buildings and damage to historical remains. | *Character:* The larger field systems are the key feature, especially where they form a geometric and regular pattern with thickly hedged fields.<br><br>*Quality:* Although commonplace, the field hedgerows are consistent, strong features and generally in good condition.<br><br>*Value:* Wide panoramic views are possible, and the simple palette of land use and low-lying terrain gives visual unity and a strong sense of identity.<br><br>*Capacity:* The landscape has some scope for landscape change since the features are generally commonplace and could be readily replaced. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Let existing hedges grow out and managed at 5m. Encourage hedgerow trees to grow out within existing hedges to add further thickening and growth within the field boundaries.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium (Site/Sites) | Medium (Site/Sites) | **Medium** | |

| Landscape Receptor – Land Use (Cottam 1 Site/Sites) | | | | |
|---|---|---|---|---|
| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited and would not affect the integrity of the waterways and local topography at all.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not adversely affect the land use. There would be a change to the arable land use which will be beneficial to soils and watercourses, significantly increasing the biodiversity and helping to capture carbon. The field boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new panels.<br><br>Overall, the land use both within the Site and of the wider area is able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The | Both the Cottam 1 North Site and Cottam 1 South Site are intensively managed arable landscapes with some varied features but predominantly a wide and exposed landscape to many parts. A gradual decline in permanent pasture can be reversed. Field sizes and boundaries vary, and opportunities exist to reinforce the character of both Sites.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following changes to the landscape:<br><br><u>Cottam 1 North Site:</u><br>Within the Cottam 1 North Site, the strong east/west road network and watercourse routes are key features that could be enhanced to strengthen the overall character and to better define these elements across the landscape. Existing woodland within the Site/Sites also offer the opportunity to enhance and improve the biodiversity to manage a layered woodland edge leading to tussock and flower rich grassland mixes.<br><br>Strong shelterbelt and hedge planting around existing properties including Turpin Farm will help to integrate these into the landscape as well as improve strong green corridors and visually link areas of woodland.<br><br><u>Cottam 1 South Site:</u><br>Within the Cottam 1 South Site, the strong rectilinear field pattern is a key feature to be enhanced with new hedge planting where appropriate.<br><br>Linear belts of scattered trees to the south and east of the Cottam 1 South Site will also help to increase the level of tree cover locally and visually and physically link to existing woodlands such as Thorpe Wood, Cammerinham Low Covert and Brattleby Gorse, through enhanced hedgerows.<br><br>Where hedgerows have been previously managed to create low, neat field boundaries, these are to be allowed to grow out and managed to a height of 5m with the addition of irregularly spaced hedgerow trees. This will have the effect of varying the land use locally whilst open views across the landscape, particularly from the east to the west still available where arable cultivation is retained.<br><br>Shelterbelt planting adjacent to the watercourses running east/west will help to define these landscape elements within the wider landscape and create valuable and diverse habitats.<br><br>Within the Cottam 1 West Site, adjacent to the River Till, scattered riparian tree belts will clearly define this feature across the broader landscape and will provide valuable and varied biodiversity benefits with riparian habitats and grassland mixes.<br><br>A greater mix of land use will also be attained through the creation of bird mitigation habitat fields to the east of the Site, creating valuable biodiversity benefits for a large number of species.<br><br>Belts of native trees adjacent to properties and watercourses to the north, southeast and east of the Site will augment the tree cover locally and help to | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east, and west of the Cottam 1 Site/Sites will be screened in close-mid range proximity due to the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining and enhancing the overall character of the area.<br><br>The proposed grassland will have established and will have settled into its natural scheme with some minor appropriate management of differing regimes. The soil quality will be considerably improved through the lack of cultivation and the chemical run-off will be reduced around the Site/Sites enhancing the water quality generally. There will be considerable biodiversity gains through the establishment of the varied grassland types and regimes and a long-term increase in pollinator species and bird and other species and numbers locally.<br><br>Growth of existing and proposed vegetation is assumed to be: | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | integrity of all features will be retained and enhancement at ground level through initial grassland planting will have beneficial effects from the outset. | visually link areas of woodland across the landscape, whilst providing valuable biodiversity benefits and better defining these watercourses.<br><br>New hedgerows will replace those lost to intensive agriculture whilst infilling with strengthen those existing which have been overmanaged.<br><br>Varied grassland mixes will provide habitats for pollinator and pest regulating species with flower rich and tussock mixes around existing and proposed hedgerows and shelterbelts. Tall herb mixes adjacent to watercourses will provide an open habitat for a wide variety of species whilst further defining the riparian landscape.<br><br>Instead of the somewhat bland and monotypic arable landscape, the development will create a series of interlinked habitats with strong field boundaries dividing the Sites with an overall much greater level of tree cover. This will enhance the local character generally and integrate development into the landscape.<br><br>Large areas of varied grassland mixes across the Cottam 1 Site/Sites will significantly enhance the landscape in physical terms with varied management regimes ensuring that the biodiversity potential is maximised. Potential exists for limited sheep grazing around the Site for short periods, comprising low density grazing in line with conservation methods.<br><br>The Scheme and its associated landscape mitigation will break up the over intensified local arable landscape and significantly diversify the land-use in the local area.<br>A greater mix of land use will also be attained through the creating of bird mitigation habitat fields to the east of the Site, creating valuable biodiversity benefits for several species.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and the varied grassland areas will have become established, starting to create valuable habitats.<br><br>Overall, following mitigation at Year 1, the Cottam 1 Site/Sites is able to accommodate the proposed change without undue adverse effects and will achieve some beneficial effects from the outset.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Land Use:<br>- Grassland reversion<br>- A more varied landscape<br>- Improved management of exiting vegetation<br>- Less intensively managed land<br>- Soil improvements<br>- Water improvements<br>- Potential animal grazing<br>- Reinstatement of historic field patterns<br>- Increased woodland/vegetation cover<br>- Bird mitigation fields<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Green energy production<br><br>Adverse effects: | Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br>Overall, following mitigation at Year 15, the Cottam 1 Site/Sites are able to accommodate the proposed change without undue adverse effects and will achieve considerable beneficial effects in terms of varied land use improvements as well as improved carbon capture and significantly increased biodiversity around the Site.<br>New hedgerows will replace those lost to intensive agriculture whilst infilling with strengthen those existing which have been overmanaged.<br><br>By Year 15, the proposed mitigation will have established and begun to mature. Existing vegetation will have grown out and will be enhanced with additional tree species. The overall scene will be somewhat more intimate, with tall hedges in places and trees dotted along roads, watercourse, and field boundaries.<br><br>Historic field patterns will also have been restored where possible.<br><br>There will be a good mix of landscape elements locally and the use of grassland wildflower mixes and some areas of low-level grazing will create a much wider mix of habitats whilst retaining or enhancing some panoramic views from the east.<br><br>Overall, following mitigation at Year 15, the Cottam 1 North Site and Cottam 1 South Sites are able to accommodate the proposed change without undue adverse effects and will achieve some positive effects. Changes to the land use would be seen as moderately beneficial in landscape terms.<br><br>**Overall,** in terms of mitigation for the Cottam 1 Site/Sites, due to the predominance of medium and large-scale agriculture, the aim is to promote the enhancement of the landscape include creating grass margins in fields and restoring hedgerows. Other measures include the provision of more habitats for pollinator and pest-regulating species. Opportunities for | |

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| | | - Panels and structures across landscape<br>- Increased hard standing areas<br>- Potential minor pollution around substations<br>- Loss of food production<br>- Increased tracks around Sites<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | increasing the area and network of habitats such as flower rich field margins, hedgerows and species rich grasslands and seeking opportunities for the sustainable use of wetland habitats. | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Neutral & Short Term | Neutral & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Low | Low | Medium | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Land Use (Cottam 1 Site)** | | |
|---|---|---|
| | **In-combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 1 Site with the other Cumulative Sites (Cottam 2, 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the level of mitigation. There will be positive changes in land use such as the creation of extensive mixed grassland habitats and enhanced field boundaries that will help reinforce the pattern of the landscape. The existing landscape character associated with the fabric of the landscape of the Cumulative Sites and Study Area is predominantly arable and the change to grassland with a significantly improved hedgerow structure would give rise to overall benefits to biodiversity as well as landscape character in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual land use elements or features of the landscape within the Cottam 1 Site/Sites. Wide panoramic views are possible, and the simple palette of land use and low-lying terrain gives visual unity and a strong sense of identity. The larger field systems are the key feature, especially where they form a geometric and regular pattern with thickly hedged fields. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Moderate with the Tillbridge Development and adverse, and adverse giving rise to likely **Significant** effects at year 1 of operation. The effects would be Minor at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the new hedgerows giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effects.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area within the character area<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that with the Cottam 1 Site, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the |

There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam Power Station and the Cottam 1 Site/Sites and extending between the Cottam 1 Site/Sites and Cottam 2 Site (the 'Cable Route Corridor).

*Aesthetic Aspects of the Landscape*
Refer to **Figure 8.15.1.1 [C6.4.8.15.1.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the Cable Route Corridor, Cottam 2, and Cottam 3a and 3b Sites and the Cable Route Corridor would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these cumulative sites and the Cable Route Corridor.

There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites and the Cottam 2 Site, located to the:

- east of Upton and to the south of Sturgate Airfield
- south of Kexby in the locality of Valley Farm
- east of Willingham by Stow in the locality of the residential property known as Carisbrooke
- east of Stow, just to the east of the property known as Tam Howes; and
- west of Sturton by Stow, extending from West Syke Lane as far as Normanby by Stow.

The land use features within these areas are focused around the settlements where the land use at their edges supports a good level of tree and woodland cover to help in curtailing visibility across these areas.

There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites and the Cottam 2 and Cottam 3a Sites/Sites, located to the:

- northeast of Sturton by Stow, extending between Tillbridge Road and Ingham Road.

The land use features within these areas are focused around local undulations in landform found to each side of the River Till and where the presence of large-scale arable fields prevail. There is a particular concentration of cumulative visibility to the northeast of Willingham by Stow, but the local concentration of woodlands comprising Top Wood, Heaton's Wood, and Big Wood help to curtail visibility in this area.

There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, and the Cottam 2 and Cottam 3b Sites located to the:

- northeast of Sturton by Stow, extending between School Lane Farm and Ingham Road.

The land use features within these areas are focused around local undulations in landform found to each side of the River Till and where the presence of large-scale arable fields prevail. There is a particular concentration of cumulative visibility to the northeast of Willingham by Stow, but the local concentration of woodlands comprising Top Wood, Heaton's Wood, and Big Wood help to curtail visibility in this area.

There are local patches of intervisibility between All Sites comprising the landscape to the:

- east boundary of the Cottam 1 North Site, extending from Glentworth in the north as far as Ingham in the south.

The land use features within these areas are focused on the settlement pattern to the east that includes Ingham, Cammeringham and Brattleby. Woodland is mainly concentrated to the west of Cammeringham and Brattleby and includes geometric shaped shelterbelts and woodland plantations consisting of predominantly native species with large poplar specimens in shelterbelts. The woodlands and settlement help to curtail visibility in this area.

Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:

**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**
**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**

intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.

There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cotton 1 Site/Sites and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:

**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 1 North, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.

**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the north of the Cottam 1 North Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15).

**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 1 South Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.
The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.

*Overall Character of the Landscape and Land Use*
Overall, the character of the landscape and the land use is shaped by the predominance of medium and large-scale agriculture. Although this land use is commonplace, the field hedgerows are consistent, strong features and generally in good condition and they play a major role in curtailing the cumulative visibility across the area. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape and its land use features. Moreover, these features play a positive role in reducing the overall cumulative effects.

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| | **Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape and Land Use*<br>Overall, the character of the landscape and the land use is shaped by the predominance of medium and large-scale agriculture. Although this land use is commonplace, the field hedgerows are consistent, strong features and generally in good condition and they play a major role in curtailing the cumulative visibility across the area. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape and its land use features. Moreover, these features play a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is low and very low for the Cumulative Sites because there are local patches of intensive cumulative change to a limited area of a landscape of medium sensitivity, affecting a few characteristics without altering the overall impression of its character. | |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15) Very Low<br>Decommissioning: Very Low | Construction: Medium<br>Operation (Year 1): Medium<br>Operation (Year 1) **with only** Embedded Mitigation: Medium<br>Operation (Year 15): Low<br>Decommissioning: Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Moderate **Significant**<br>Operation (Year 1): Moderate **Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Moderate **Significant**<br>Operation (Year 15): Minor **Not Significant**<br>Decommissioning: Minor **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

| Landscape Receptor – Land Use (Cottam 2 Site) |
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| **Receptor Baseline:**<br><br>Within the Cottam 2 Site, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**.<br><br>The Cottam 2 Site (2km Study Area) consists primarily of arable land use with small to medium sized fields separated by hedgerows with some trees, and drainage ditches that feed into the wider drainage network of the River Till. The wider landscape is typified by similar arable fields, hedgerows, and watercourses, which is synonymous with the Site/Sites. Small woodlands are located to the northeast of the Site/Sites and are identified as coverts, which are broadly rectangular or angular and shaped by field pattern.<br><br>**Key Features:**<br><br>This is landscape with a gently undulating and low-lying landform where the landscape follows a north-south pattern due to the orientation of the underlying Triassic and Jurassic geology and this is an important Land Use Feature for the Cottam 2 Site.<br><br>The landscape mainly comprises of agricultural field parcels that follow the surrounding field patterns and consist of predominantly arable and grazing land use. A collection of larger field systems are also found further north towards Southorpe and further northeast towards Blyborough. The field pattern is more geometric and regular towards the west of the Site/Sites to the north of Corringham than fields to the east, which although regular in shape they are less geometric. Wharton Wood and Birch Wood are large areas of woodland to the west of the Site/Sites with Wharton being the largest of the two and part of which is ancient woodland. These woodland forms part of a wider structure of woodlands across the area. Woodlands to the east of the Site/Sites comprises Yawthorpe Fox Covert and woodland at Willoughton Grange. The hedgerows are generally uniform and have gaps in places with very few hedgerow trees and some small areas of scrub. Settlements surrounding the Cottam 2 Scheme include Corringham to the southwest with Aisby and Pilham to the northwest of the Cottam 2 Site. The small hamlet of Yawthorpe is also located to the east of the Cottam 2 Site. There are many more settlements within the 5km study area of the Cottam 2 Site, some of these include the eastern edge of Gainsborough, Blyton, Laughton, Scotton, Willoughton, Hemswell and Heapham. The River Till and its tributaries running through this area is the key features and the major corridor for wildlife supporting a variety of wetland habitats. The Site/Sites sit within a pattern of dispersed farms including Corringham Grange Farm, Ankcliffe Farm, Taskers Farm, Home Farm and Park Farm. There are typically low levels of woodland cover in this area with the majority of woodland occurring to the west of Corringham. Areas closer to the settlements of Corringham, Aisby and Yawthorpe have greater levels of woodland cover. |

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change for the Cottam 2 Site Land Use, recent trends have shown that hedgerow trees are scarce and limited to oak and ash, with willow along watercourses. The flowing tributaries of the River Till have formed small valleys which are barely evident due to the lack of riparian vegetation. The shift away from mixed farming has impacted upon areas of pasture and grassland habitats, which has had an impact upon local character and biodiversity. The watercourses are not readily distinguished in the landscape due to the lack of waterside trees and riparian habitats.<br><br>**Overall,** the susceptibility of Land Use for the Cottam 2 Site is conditioned by the need to protect hedgerow trees and ensuring that new development is complimentary to individual trees and those along watercourses. The access network within the area also has poor connections, particularly to the water courses and river corridors where the majority of the health, recreation, geodiversity benefits need to be relinquished to enhance and promote opportunities. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects given there is scope to restore the woodland, hedgerow, and tree cover and to further open up recreation opportunities. | *Scenic:* The Trent floodplain is the key feature of the area and the banks of the river in distant views contribute to the overarching sense of place and history.<br><br>*Cultural:* There are many tranquil places for people to enjoy both for recreation and for local residents, but a reconnection with the river systems and their floodplains would help enhance this.<br><br>*Natural:* Woodland cover is low and because of the history of the land for agriculture, the area has retained little semi-natural habitat. The hedgerows provide the main habitats for farmland species and are substitute woodland habitats that provide linkages across the landscape.<br><br>*Recreation and Enjoyment:* Recreation is provided by numerous lanes since there is a limited public right of way (PRoW) network in the area. Cycling opportunities along the network of minor roads is a major recreational resource due to the quietness of these lanes.<br><br>*Local Distinctiveness and Sense of Place:* This is a predominantly rural and sparsely settled area with small villages and dispersed farms.<br><br>*Health and Wellbeing:* The tranquility of the area is a key feature due to the network of rural lanes, villages, and watercourses, however they are not always readily accessible to the public.<br><br>*Important Spatial Function:* This area supports gently undulating and low-lying landform with low ridges dividing shallow, broad river valleys. The land dips sharply away to the broad low-lying vales of the River Till.<br><br>**Overall,** the value of the Land Use for the Cottam 2 Site is shaped by an area of farmland where the hedgerow quality tends to be low due to the predominance of arable cropping. Areas of semi-natural habitat are also very limited and fragmented due to agricultural intensification. | *Character:* The small to medium sized fields are separated by hedgerows with some trees, and drainage ditches. The landscape has a positive character which is re-enforced by small woodlands that are located to the northeast of the Site/Sites.<br><br>*Quality:* The wider landscape is typified by arable fields, hedgerows, and watercourses, which is synonymous with the Site/Sites that are in moderate condition.<br><br>*Value:* The value is experienced through the recreation that is provided by numerous lanes since there is a limited public right of way (PRoW) network in the area. Cycling opportunities along the network of minor roads is a recreational resource due to the quietness of these lanes.<br><br>*Capacity:* The most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges. The increase in field size affects the capacity of the landscape to absorb change, however the landscape features are commonplace and could be readily replaced. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Panels to be set minimum of 20m from major watercourses and minimum of 8m from minor watercourses.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Let existing hedges grow out and managed at 5m. Encourage hedgerow trees to grow out within existing hedges to add further thickening and growth within the field boundaries.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | Not Applicable |

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| Medium (Site/Sites) | Medium (Site/Sites) | **Medium** | Not Applicable |

| **Landscape Receptor – Land Use (Cottam 2 Site)** | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited and would not affect the land use locally.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites creating a much broader mix of land use locally, creating many associated beneficial effects.<br><br>These short-lived construction activities would not adversely affect the land use. There would be a change to the arable land use which will be beneficial to soils and watercourses, significantly increase biodiversity and help to capture carbon. The field boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new panels.<br><br>Overall, the land use both within the Site and of the wider area is able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all features will be retained and enhancement at ground level through initial grassland planting will have beneficial effects from the outset. | The Cottam 2 Site forms part of a wider intensively managed arable landscape with some varied features but predominantly a low-lying landform with small watercourses and ditches that are not evident within the wider landscape. Some of these watercourses are man-made, creating some rectilinear field patterns. The field pattern is relatively intact, with some loss of hedgerows to the southeast due to arable cultivation.<br><br>A number of woodlands lie around the Site but are not impacted by the Cottam 2 Site or its Scheme. Small areas of rough ground exist around ponds, and two properties are located within the Site. There is a lack of hedgerow trees within field boundaries.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following changes to the landscape:<br><br>Where hedgerows have been previously managed to create low, neat field boundaries, these are to be allowed to grow out and managed to a height of 5m with the addition of irregularly spaced hedgerow trees which are an important management objective. This will have the effect of varying the land use locally whilst retaining open views across the landscape, particularly from the east to the west. Open areas are still available where arable cultivation is retained around the Cottam 2 Site. New hedgerows and shelterbelts will also help to strengthen the historic field pattern where these have been lost or degraded through arable intensification.<br><br>To the east, riparian species tree belts will strengthen the character locally by identifying the Yawthorpe Beck watercourse across the landscape setting and creating a vegetated riparian corridor and creating a variety of habitats adjacent to the watercourse.<br><br>Instead of the somewhat bland and monotypic arable landscape, the Scheme will bring forward a series of interlinked habitats with strong field boundaries defining the Cottam 2 Site with an overall much greater level of tree cover. This will enhance the local character generally and integrate the Scheme into the landscape.<br><br>Large areas of varied grassland mixes across the Cottam 2 Site will significantly enhance the landscape | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east, and west of the Cottam 2 Site will be screened in close-mid range proximity due to the new hedgerow and shelterbelt planting and the enhancement of existing hedgerows which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will also follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining and enhancing the overall character of the area.<br><br>The proposed grassland will have established and will have settled into its natural scheme with some minor appropriate management of differing regimes. The soil quality will be considerably improved through the lack of cultivation and the chemical run-off will be reduced around the Site/Sites enhancing the water quality generally. There will be considerable biodiversity gains through the establishment of the varied grassland types and regimes and a long-term increase in pollinator species and bird and other species and numbers locally.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | in physical terms with varied management regimes ensuring that the biodiversity potential is maximised. Potential exists for limited sheep grazing around the Cottam 2 Site, comprising short periods of low density grazing in line with conservation methods.<br><br>The Scheme and its associated landscape mitigation will break up the over intensified local arable landscape and significantly diversify the land-use in the local area.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and the varied grassland areas will have become established, starting to create valuable habitats.<br><br>Overall, following mitigation at Year 1, the Cottam 2 Site is able to accommodate the proposed change without undue adverse effects and will achieve some beneficial effects from the outset.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Land Use:<br>- Grassland reversion<br>- A more varied landscape<br>- Improved management of exiting vegetation<br>- Less intensively managed land<br>- Soil improvements<br>- Water improvements<br>- Potential animal grazing<br>- Reinstatement of historic field patterns<br>- Increased woodland/vegetation cover<br>- Bird mitigation fields<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Green energy production<br><br>Adverse effects:<br>- Panels and structures across landscape<br>- Increased hard standing areas<br>- Potential minor pollution around substations<br>- Loss of food production<br>- Increased tracks around Sites<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br>Overall, following mitigation at Year 15, the Cottam 2 Site is able to accommodate the proposed change without undue adverse effects and will achieve considerable beneficial effects in terms of varied land use improvements as well as improved carbon capture and significantly increased biodiversity around the Site.<br>By Year 15, the proposed mitigation will have established and begun to mature. Existing vegetation will have grown out and will be enhanced with much needed additional tree species. The overall scene will be somewhat more intimate, with tall hedges in places and trees dotted along roads and field boundaries.<br><br>Historic field patterns will also have been restored where possible.<br><br>There will be a good mix of landscape elements locally and the use of grassland with varied management regimes, and flower rich, wildflower mixes with some areas of low-level grazing will create a much broader mix of habitats.<br><br>Overall, following mitigation at Year 15, the Site is able to accommodate the proposed change without undue adverse effects and will achieve considerable beneficial effects. Changes to the land use would be seen as moderately beneficial in landscape terms.<br><br>**Overall,** in terms of mitigation for the Cottam 2 Site, the main aim is to enhance the woodland and hedgerow network through the planting of tree belts, hedgerow trees and new hedgerows to benefit landscape character. Creating grass margins in arable fields is also a key priority, including increasing the amount of flower rich areas, hedgerows, and species rich grasslands. Planting new hedgerows to restore historic field patterns and create habitat linkages is also appropriate to counteract the threat to the landscape character and biodiversity from intensive agriculture. | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |

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| **Level of Effect** | Neutral & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Low | Low | Medium | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Land Use (Cottam 2 Site)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 2 Site with the other Cumulative Sites (Cottam 1 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the level of mitigation. There will be positive changes in land use such as the creation of extensive mixed grassland habitats and enhanced field boundaries that will help reinforce the pattern of the landscape. The existing landscape character associated with the fabric of the landscape of the Cumulative Sites and Study Area is predominantly arable and the change to grassland with a significantly improved hedgerow structure would give rise to overall benefits to biodiversity as well as landscape character in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual land use elements or features of the landscape within the Cottam 2 Site. The wider landscape is typified by arable fields, hedgerows, and watercourses. The area shaped by farmland where the hedgerow quality tends to be low due to the predominance of arable cropping. Areas of semi-natural habitat, trees and woodland cover are also very limited and fragmented due to agricultural intensification.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridor).<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.2 [C6.4.8.15.1.2]** which shows that with the Cottam 2 Site, cumulative visibility with the Cottam 1 Site/Sites and Cottam 3a and 3b Sites would not be experienced across the entirety of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of intervisibility between the Cottam 2 Site and with the Cottam 3a and Cottam 3b Sites extending from the:<br>• South boundary of the Cottam 2 Site, starting at the eastern edge of Corringham and reaching as far as Yawthorpe Beck and Yawthorpe<br>• West boundary of the Cottam 2 Site, extending as far as Pilham Lane<br>• East boundary of the Cottam 2 Site, extending as far Yawthorpe and Yawthorpe Fox Covert<br>• Northwest boundary of the Cottam 2 Site, extending as far as the Cottam 3a and 3b Sites. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Moderate with the Tillbridge Development, and adverse giving rise to likely **Significant** effects at year 1 of operation. The effects would be Minor at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the new hedgerows giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping to reduce the cumulative effects.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual land use elements or features of the landscape within the Cottam 2 Site. The wider landscape is typified by arable fields, hedgerows, and watercourses. The area shaped by farmland where the hedgerow quality tends to be low due to the predominance of arable cropping. Areas of semi-natural habitat, trees and woodland cover are also very limited and fragmented due to agricultural intensification.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridor').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.2 [C6.4.8.15.2.2]** which shows that with the Cottam 2 Site, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 2 Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the southwest of Cottam 2, where the intervening settlements of Heapham, Upton, Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 2 Site, where their boundaries are located in close proximity to each other, with Corringham Road in between. There are no intervening settlements, and limited presence of iwoodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15). |

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| | Despite the intensive agricultural use and lack of hedgerow cover, there are local concentrations of woodland and tree cover at strategic locations between the cumulative sites, which help curtail intervisibility. Between the Cottam 3a and 3b Sites, the woodland and tree cover associated with the mainline railway and Grange Farm and Top Farm is a key land use feature that contributes to reduced visibility across the landscape.<br><br>There is a local patch of intervisibility between the Cottam 2 Site and with the Cottam 3b Site, comprising the:<br>• Northern-most tip of the Cottam 2 Site extending across the medieval village of Dunstall as far as the medieval village of Southorpe; and<br>• Southeast of the River Eau, extending as far as Huckerby Farm and Huckerby Bungalows.<br><br>The presence of former settlement such as Southorpe brings mature trees and woodland cover to the landscape setting of the cumulative sites, and this helps in providing separation and screening between them.<br><br>There are local patches of intervisibility between All Sites comprising the:<br>• North of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe<br>• West of the settlement of Corringham, extending from Staplegate House as far Windy Ridge on Pilham Lane<br>• West of Springthorpe, extending across the landscape as far as Harpswell Low Farm; and<br>• East of Yawthorpe, extending as far as Hemswell.<br><br>The intensive agricultural land use also contributes to the abundance of farmsteads and small holdings across this landscape, which also have associated large scale agricultural buildings, tree cover and shelterbelts such as those present at Bonsdale Farm. These features make a significant contribution in breaking down the visibility between the cumulative sites.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape and Land Use*<br>Overall, the character of the landscape and the land use is shaped by the lack of a strong hedgerow framework, but the presence of farmsteads and their associated large-scale agricultural buildings with associated woodland and tree cover make up for their absence in providing enclosure and intimacy to open areas. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its land use features. Moreover, these features play a positive role in reducing the overall cumulative effects. | **Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 2 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, and where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Corringham.<br><br>*Overall Character of the Landscape and Land Use*<br>Overall, the character of the landscape and the land use is shaped by the lack of a strong hedgerow framework, but the presence of farmsteads and their associated large-scale agricultural buildings with associated woodland and tree cover make up for their absence in providing enclosure and intimacy to open areas. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its land use features. Moreover, these features play a positive role in reducing the overall cumulative effects. |

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| | The difference in effect between the addition of the Scheme to the cumulative baseline is low and very low for the Cumulative Sites because there are local patches of intensive cumulative change to a limited area of a landscape of medium sensitivity, affecting a few characteristics without altering the overall impression of its character. | |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Medium<br>Operation (Year 1): Medium<br>Operation (Year 1) **with only** Embedded Mitigation: Medium<br>Operation (Year 15) Mitigation: Low<br>Decommissioning: Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation:Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Moderate **Significant**<br>Operation (Year 1): Moderate **Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Moderate **Significant**<br>Operation (Year 15): Minor **Not Significant**<br>Decommissioning: Minor **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under paneled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

| Landscape Receptor – Land Use (Cottam 3a and 3b Sites) |
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**Receptor Baseline:**

Within the Cottam 3a and 3b Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**.

The sites within Cottam 3 (2km Study Area) can be sub-divided into two distinct land areas.

- Cottam 3a
- Cottam 3b

**Key Features:**

There is open agricultural land with small pockets of woodland with Laughton Woods to the northwest running the west into Laughton Common and Owlet Plantation and this forms an important Land Use feature for both Cottam 3a and 3b Site.

Cottam 3a:
The landscape mainly comprises predominantly of open fields with hedged boundaries and structures associated with the former airfield and currently is used for motor racing and carting. The site boundaries are enclosed to the south, east and west by hedgerows with trees, and drainage ditches leading to Northorpe Beck in the northeast. The wider landscape comprises of open arable and pastoral farmland, since the soils support the cultivation of cereals, oilseeds, root crops and potatoes. Farmsteads of large buildings are common to this landscape including buildings at Blenheim Farm to the east and Hall Farm to the north. Hedgerow removal has created some very large fields under single crop and this sense of openness is exaggerated by the tightly clipped hedges, particularly along Kirton Road. A collection of larger field systems is found, further east, to the east of Grange Farm around Northorpe. These larger field systems are highly irregular in pattern and tend to follow the Edge or Cliff where it rises towards the east. Some of the fields are divided by ditches and dykes. In stark contrast, there are smaller scale field systems to the southeast of Kirton Road and to the west of the A159 (Laughton Road) where the landscape falls towards Laughton Highland Drain and where the farmland is more pastoral with thickly hedged fields. Small tributaries of Laughton Highland Drain form crossing points at the junction with the public right of way (PRoW) network. There are significantly fewer watercourses to the east of the A159 (Laughton Road) around Blyton Grange as this is where the landscape becomes more elevated towards the distinct Jurassic Limestone Scarp slope that runs north from Lincoln. Long, straight roads are common in this area, apart from Ingham Road, but some take a right angle turn or lead into smaller tracks to follow the precedent of the Edge or Cliff. Settlement pattern is nucleated, mainly comprising Blyton and Wharton to the west and Kirton in Lindsey, Grayingham and Blyborough to the east. Isolated dwellings or farmsteads are also a key feature of this landscape.

Cottam 3b:
The landscape mainly comprises of agricultural land with small pockets of settlements and villages breaking up the landscape such as Pilham and Aisby. The site boundaries are enclosed to the south, east and west by hedgerows with trees and drainage ditches and the mainline railway strongly defines the boundary to the north. There are a very few woodlands in the immediate landscape that helps to retain inspirational long views towards the south and east towards Yawthorpe and Aisby. Views towards the west are curtailed by the settlement of Blyton and woodlands south of Wharton, including Wharton Wood and Birch Wood. To the southeast of the Cottam 3b Site near Aisby and Yawthorpe, the landscape mainly comprises larger field systems that are irregular in pattern, especially where they are dissected by the meandering alignment of the tributaries of the River Till. Fields are occasionally geometric in pattern where they follow the strong formal road network such as Pilham Lane, the fields are divided by ditches and dykes, and also remain separated by hedgerows with trees. There are more minor tributaries of the River Till in this area, relative to the Cottam 3a North Site and the small number of drainage ditches that do feed into the tributaries mainly follow a sinuous alignment running in all directions. The landscape is also punctuated by small roads running in a predominantly east west or north south direction across the landscape. These long, straight roads are more abundant in this area, relative to the Cottam 3a Site and many are bordered by isolated farmsteads and residential dwellings, often with very narrow grass verges and high hedgerows that add elements of intimacy to these lanes. Settlement pattern to the east of Cottam 3b includes the Medieval villages of Southorpe, Dunstall with Gilby village to the south. To the west of the Cottam 3b Site, the settlements of Blyton and Pilham are strong features in the landscape where the church spires are captured in views across the area. Small pockets of woodland are mainly concentrated to the east of the Cottam 3b Site and includes geometric shaped shelterbelts and also woodland plantations consisting of predominantly native species at Yawthorpe Fox Covert and Blyborough Covert.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
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| In terms of forces for change for the Cottam 3a and 3bSites (Land Use), recent trends have shown that the productive cropping from large farmsteads gives a prevalence of large rectilinear fields bound by tightly cropped hedgerows. Active and re-used airfields along with communication masts and wind turbines are dominant features. Woodland plantations are scarce and should be managed to ensure their long-term survival as landscape features, increasing the context of native broadleaves where possible.<br><br>**Overall,** the susceptibility of the Land Use for the Cottam 3a and 3b Sites is conditioned by the lack of woodlands that only occur as small plantations with occasional sheltering copses. The long straight roads cross the area, but few have wide verges to support habitat networks, and many are through routes such as Kirton Road where traffic is fast moving providing an inhibited experience for visitors to the area. However, there is an opportunity to restore and introduce hedges in key locations to restore field patterns. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects given there is scope to manage the long-term survival of woodlands and protect wide grass verges as habitat linkages across the area. | *Scenic:* The long views out to the west towards the Cliff and the small villages of local sandstone are the main contributors to the scenic quality of the landscape.<br><br>*Cultural:* Evidence of Roman influence through roads, tracks, and Medieval settlement of abandoned villages at Southorpe, Dunstall and Gilby.<br><br>*Natural:* The grass verges are often a feature of lang straight roads and these offer key biodiversity corridors across the landscape along with the wetland habitats associated with the tightly woven tributaries of the River Till.<br><br>*Recreation and Enjoyment:* The area is lacking in public right of way (PRoW) connections, but the local roads provide senses of escapism and inspiration where they offer long views towards the Cliff, as well as long distance views to Lincoln Cathedral.<br><br>*Local Distinctiveness and Sense of Place:* A sense of place is provided by the large-scale landscape with its west facing scarp known as the 'Cliff'.<br><br>*Health and Wellbeing:* This is evident through the strong sense of tranquility associated with the Cliff top, long views and distant woodlands and heathlands on the horizon.<br><br>*Important Spatial Function:* The exposed landscape of the limestone plateau is occasionally broken by small plantation woodlands often sheltering dispersed farmsteads and large-scale agricultural buildings.<br><br>**Overall,** the value of Land Use for the Cottam 3a and 3b Sites is shaped by an arable landscape with a strong influence of former airfields adapted for alternative uses. These airfields occupy the higher plateau of the limestone cliff and are visible in long views across the area. There are a range of habitats, but they are mainly centered on the fine network of tributaries of Northorpe Beck. | *Character:* The landscape mainly comprises predominantly of open fields with hedged boundaries and also land and structures associated with the former airfield that is currently is used for motor racing and carting.<br><br>*Quality:* Some of the areas have a positive character but includes parts that that have been subject to alteration and degradation such as the former airfield.<br><br>*Value:* The area is lacking in public right of way (PRoW) connections, but the local roads provide senses of escapism and inspiration where they offer long views towards the Cliff, as well as long distance views to Lincoln Cathedral.<br><br>*Capacity:* The landscape benefits from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Panels to be set minimum of 20m from major watercourses and minimum of 8m from minor watercourses.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Let existing hedges grow out and managed at 5m. Encourage hedgerow trees to grow out within existing hedges to add further thickening and growth within the field boundaries.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium (Site/Sites) | Medium to Low (Site/Sites) | **Medium** | |

| Landscape Receptor – Land Use (Cottam 3a and 3b Sites) | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited and would not affect the integrity of the waterways and local topography at all.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites. There may be very minor removal of sections of hedgerow around access roads for visibility purposes.<br><br>These short-lived construction activities would not adversely affect the land use. There would be a change to the arable land use which will be beneficial to soils and watercourses, significantly increase biodiversity and help to capture carbon. The field boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new panels.<br><br>Overall, the land use both within the Site and of the wider area is able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all features will be retained and enhancement at ground level through initial grassland planting will have beneficial effects from the outset. | Both the Cottam 3a and 3b Sites form part of a wider intensively managed arable landscape with some varied features but predominantly a wide and exposed landscape to many parts including around the remnant airfield locations.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following changes to the landscape:<br><br>Where hedgerows have been previously managed to create low, neat field boundaries, these are to be allowed to grow out and managed to a height of 5m with the addition of irregularly spaced hedgerow trees. This will have the effect of varying the land use locally whilst open views across the landscape, particularly from the east to the west still available where arable cultivation is retained.<br><br>Strong shelterbelt and hedge planting around existing properties will help to integrate these into the landscape.<br><br>A greater mix of land use will also be attained through the creation of bird mitigation habitat fields to the east of the Site, creating valuable biodiversity benefits for a large number of species.<br><br>Instead of the somewhat bland and monotypic arable landscape, the Scheme will create a series of interlinked habitats with strong field boundaries dividing the Sites with an overall much greater level of tree cover. This will enhance the local character generally and integrate the panel areas into the landscape.<br><br>Large areas of varied grassland mixes across the Cottam 3a and 3b Site/Sites will significantly enhance the landscape in physical terms with varied management regimes ensuring that the biodiversity potential is maximised. Potential exists for limited sheep grazing around the Site for short periods, comprising low density grazing in line with conservation methods.<br><br>The Scheme and its associated landscape mitigation will break up the over intensified local arable landscape and significantly diversify the land-use in the local area. | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east and west of the Cottam 3a and 3b Site/Sites will be screened in close-mid range proximity due to the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining and enhancing the overall character of the area.<br><br>The proposed grassland will have established and will have settled into its natural scheme with some minor appropriate management of differing regimes. The soil quality will be considerably improved through the lack of cultivation and the chemical run-off will be reduced around the Site/Sites enhancing the water quality generally. There will be considerable biodiversity gains through the establishment of the varied grassland types and regimes and a long-term increase in pollinator species and bird and other species and numbers locally.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long-term landscape and visual effects of this mitigation. |

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| | | Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and the varied grassland areas will have become established, starting to create valuable habitats.<br><br>Overall, following mitigation at Year 1, the Cottam 3a and 3b Sites are able to accommodate the proposed change without undue adverse effects and will achieve some beneficial effects from the outset.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Land Use:<br>- Grassland reversion<br>- A more varied landscape<br>- Improved management of exiting vegetation<br>- Less intensively managed land<br>- Soil improvements<br>- Water improvements<br>- Potential animal grazing<br>- Reinstatement of historic field patterns<br>- Increased woodland/vegetation cover<br>- Bird mitigation fields<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Green energy production<br><br>Adverse effects:<br>- Panels and structures across landscape<br>- Increased hard standing areas<br>- Potential minor pollution around substations<br>- Loss of food production<br>- Increased tracks around Sites<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>Overall, following mitigation at Year 15, the Cottam 3a and 3b Site/Sites are able to accommodate the proposed change without undue adverse effects and will achieve considerable beneficial effects in terms of varied land use improvements as well as improved carbon capture and significantly increased biodiversity around the Site.<br><br>By Year 15, the proposed mitigation will have established and begun to mature. Existing vegetation will have grown out and will be enhanced with much needed additional tree species. The overall scene will be somewhat more intimate, with tall hedges in places and trees dotted along roads and field boundaries.<br><br>Historic field patterns will also have been restored where possible.<br><br>There will be a good mix of landscape elements locally and the use of grassland with varied management regimes, and flower rich, wildflower mixes with some areas of low-level grazing will create a much broader mix of habitats.<br><br>Overall, following mitigation at Year 15, the Cottam 3a and 3b Sites are able to accommodate the proposed change without undue adverse effects and will achieve considerable beneficial effects. Changes to the land use would be seen as moderately beneficial in landscape terms.<br><br>**Overall**, in terms of mitigation for the Cottam 3a and 3b Sites, the aim is to increase woodland cover where possible whilst retaining long, panoramic views out over adjoining low-lying land, especially from the Edge and towards the Cliff to the east. The intensive arable farming should be extended to encourage mixed farming where possible to provide a wider variety of habitats. Hedgerows are tightly managed and should allowed to fill out with planting to fill the gaps. | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Adverse & Short Term** | Neutral & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Negligible Not Significant** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |

| **Site/Sites and Cable Route Corridor:** | | | | |
|---|---|---|---|---|
| **Magnitude** | Low | Low | Medium | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Land Use (Cottam 3a and 3b Sites)** | | |
|---|---|---|
| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 3a and 3b Sites with the other Cumulative Sites (Cottam 1 and 2) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the level of mitigation. There will be positive changes in land use such as the creation of extensive mixed grassland habitats and enhanced field boundaries that will help reinforce the pattern of the landscape. The existing landscape character associated with the fabric of the landscape of the Cumulative Sites and Study Area is predominantly arable and the change to grassland with a significantly improved hedgerow structure would give rise to overall benefits to biodiversity as well as landscape character in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual land use elements or features of the landscape within the Cottam 3a and 3b Sites. The wider landscape is typified by the long straight roads cross the area, but few have wide verges to support habitat networks, and many are through routes. The area is lacking in public right of way (PRoW) connections, but the local roads provide senses of escapism and inspiration where they offer long views.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridor).<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a Site, cumulative visibility with the Cottam 1 Site/Sites, Cottam 2 Site and Cottam 3b Site would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of intervisibility between the Cottam 3a and 3b Sites, extending from the:<br>• Northeast boundary of the Cottam 3a Site, defined to the west by the Green Respect Burial Park and Park House Farm, and reaching as far as Northorpe in the east<br>• East boundary of Cottam 3a Site, and stopping short of Cold Harbour Farm; and<br>• North boundary of the Cottam 3b Site, extending for a short distance as far as Grange Farm and Top Farm.<br><br>Despite the concentration of straight roads that cut bluntly across the open arable landscape, there are concentrations of alternative land use such as the Green Respect Burial Park that bring diversity to the landscape and support woodland cover. These alternative landscape features help to close down visibility across the landscape. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Moderate with the Tillbridge Development, and adverse giving rise to likely **Significant** effects at year 1 of operation. The effects would be Minor at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the new hedgerows giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping to reduce the cumulative effects.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual land use elements or features of the landscape within the Cottam 3a and 3b Sites. The wider landscape is typified by the long straight roads cross the area, but few have wide verges to support habitat networks, and many are through routes. The area is lacking in public right of way (PRoW) connections, but the local roads provide senses of escapism and inspiration where they offer long views.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridor').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a and 3b Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 3a Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the south west of Cottam 3a and 3b, where the intervening settlements of Heapham, Upton, Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 3a and 3b Site, where the boundaries of the Cottam 2 and the Tillbridge Development are located in close proximity to each other, with Corringham Road in between. There are no intervening settlements, and limited presence of woodlands or major topography, such that the presence of Tillbridge Development with the Cottam 2 Site would give rise to a direct and compounded relationship in terms of the landscape context. The presence of the Tillbridge Development with the Cottam 3a and 3b Sites would not be perceived in the same context<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 2 Site where the intervening settlements of |

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| | There are local patches of intervisibility between the Cottam 3a, 3b and Cottam 2 Sites, extending from the:<br>• South boundary of the Cottam 3b Site, bordered by Pilham to the west and the medieval settlement of Dunstall to the east, and reaching as far as Springthorpe in the south<br>• South boundary of the Cottam 3a Site, bordered by the eastern edge of Blyton to the west, reaching Grange Farm and stopping short of the mainline railway; and<br>• North boundary of the Cottam 3a Site, following the alignment of the A159 (Laughton Road) and stopping short to the west of the Green Respect Burial Park.<br><br>This section of the landscape is showing higher concentrations of cumulative visibility and land use is mainly arable with a limited presence of settlement. The natural features however, such as the meandering watercourses and smaller scale field systems bring a tighter grain and added layers to the landscape, which helps curtail views across the area.<br><br>There is a local patch of intervisibility between All Sites, located to the:<br>• East of the Cottam 3b Site and north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe.<br><br>The exposed landscape to the east of Cottam 3b Site is occasionally broken by small plantation woodlands often sheltering dispersed farmsteads and large-scale agricultural buildings such as those at Huckerby Farm and Huckerby Bungalows which bring screening and enclosure.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape and Land Use*<br>Overall, the character of the landscape and the land use is shaped an arable landscape with a strong influence of former airfields and dispersed farmsteads. mall pockets of settlements and villages breaking up the landscape such as Pilham and Aisby. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3a and 3b Sites would not alter the character of the landscape and its land use features. Moreover, these features play a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is low and very low for the Cumulative Sites because there are local patches of intensive cumulative change to a limited area of a landscape of medium sensitivity, affecting a few characteristics without altering the overall impression of its character. | Stow, Sturton by Stow and Bransby lie between, and where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea and Blyton.<br><br>*Overall Character of the Landscape and Land Use*<br>Overall, the character of the landscape and the land use is shaped an arable landscape with a strong influence of former airfields and dispersed farmsteads. Small pockets of settlements and villages breaking up the landscape such as Pilham and Aisby. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3a and 3b Sites would not alter the character of the landscape and its land use features. Moreover, these features play a positive role in reducing the overall cumulative effects. |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low | Construction: Medium<br>Operation (Year 1): Medium<br>Operation (Year 1) **with only** Embedded Mitigation: Medium<br>Operation (Year 15) **with** Mitigation: Low |

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| | Decommissioning: Very Low | Decommissioning: Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Moderate **Significant**<br>Operation (Year 1): Moderate **Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Moderate **Significant**<br>Operation (Year 15): Minor **Not Significant**<br>Decommissioning: Minor **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

**Landscape Receptor – Topography and Watercourses (Cottam 1 Site/Sites)**

**Receptor Baseline:**

Within the Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends across the majority of the 2km and 5km Study Area apart from the eastern most edge where it shares a boundary with RLCT Profile: 6a Limestone Scarps and Dipslopes. The western extent of the 5km Study Area is also host to a small part of RLCT Profile 3a: Floodplain Valleys and RLCT Profile: 4b Wooded Vales.

The Site/Sites within Cottam 1 (2km Study Area) can be sub-divided into two distinct land areas:

- Cottam 1 North
- Cottam 1 South

**Key Features:**

The landscape is characterized by a low-lying terrain, centered on the River Trent with a notable topographical feature that lies to the east where the landform rises to create a distinctive sloping ridge forming a prominent landform. This landform is described as the 'Edge', the 'Cliff' or the 'Lincolnshire Edge' and along it there is a linear line of small villages. The powerful River Trent and its flood plain provide a strong feature running through the landscape. The River Till is also a key watercourse, and its upper reaches drain the land to the east of Gainsborough and is ultimately a tributary of the River Witham. The middle section of the River Till is embanked between Saxilby in the south and as far as Sturton by Stow in the north, as the water level is higher than that of the surrounding land. At the lower stretches near Lincoln, the River Till is canalised where it joins with Foss dyke.

Cottam 1 North:
The landscape is generally flat or gently sloping, with levels ranging from approximately 10m AOD to the west of the area where the River Till passes to the east of Willingham by Stow and Normanby by Stow. The landform then rises to approximately 15m AOD towards the eastern edge of Coates, and then continues to rise towards Ingham and Middle Street, which reaches 65m AOD. The landform also rises to 15m AOD towards the southwest around the settlement of Stow where it then falls towards the east at the River Till and Squire's Bridge. The River Till drops below the 10m AOD contour in the west to reach Willingham by Stow, where it skirts the eastern fringe of the village passing under two bridges at Fillingham Lane and Cot Garth Lane. To the south of the village the Till is joined by another tributary before skirting Normanby by Stow to the east via the woodland at Normanby Gorse. The Till then turns southeast towards Coates before passing under Squire's Bridge at Ingham Road, where it is joined by a further tributary which drains the area to the northeast of Ingham Road via a series of drainage ditches managed by the Upper Witham internal drainage board (IDB).

Cottam 1 South:
The landscape is generally flat or gently sloping, with levels ranging from approximately 10m AOD to the west of the area where the River Till passes to the east of Stow Pasture and Sturton by Stow. The landform then rises to approximately 15m AOD towards the western edge of Cammeringham at Blackthorn Hill, and then continues to rise towards Ermine Street and Scampton Airfield, which reaches 60m AOD. The landform also rises to 15m AOD towards the SW around the settlement of Sturton by Stow where it then falls towards the east at the River Till around Thorpe Bridge on Thorpe Road and Till Bridge the A1500 (Tillbridge Road). The River Till drops below the 10m AOD contour where it is enclosed by raised embankments between Thorpe Bridge and Tillbridge. The River Till passes to the southeast of Sturton by Stow, to the west of Thorpe le Fallows and via Moor Farm and Tillbridge Farm the A1500 (Tillbridge Lane), once the course of a Roman road, at Tillbridge. The River Till is enclosed by earth embankments on both sides of the channel to increase its capacity and to prevent flood water from inundating the surrounding land.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change for the Cottam 1 Site/Sites (Topography and Watercourses), recent trends have shown that there are issues with water quality on much of the River Till, caused by run-off from agricultural land, physical modification of the river channel, and discharges from sewage treatment works. The flood plains are distinctive features, however, the rivers themselves, such as the River Till are not visually prominent in the wider landscape and are often hidden from view by levees.<br><br>**Overall**, the susceptibility of the Topography and Watercourses for the Cottam 1 Site/Sites is conditioned by the watercourses where they flow largely unnoticed through the landscape marked only by a fringe of scattered trees and riparian vegetation. However, there is an opportunity to reconnect the rivers with their flood plains and restore and create a mosaic of wetland and flood plain habitats including grazing marsh, pastures, fens, reedbeds, wet woodland and eutrophic standing waters. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects given there is scope to manage the link and extend existing habitats and make more space for the natural development of the watercourses and their associated topographical features. | *Scenic:* The river flood plains associated vegetation, grazing marsh and the landscape character they provide are important features.<br><br>*Cultural:* The dominance of the River Trent is a key feature in contrast to the presence of the River Till as it meanders slowly across it flood plain.<br><br>*Natural:* Very little semi-natural habitat remains across the area, apart from habitat associated with the River Till and its tributaries, which provides a strong feature running through the landscape.<br><br>*Recreation and Enjoyment:* The River Till and its associated flood plains play an important role in the area for their recreational importance and in underpinning the character of the area.<br><br>*Local Distinctiveness and Sense of Place:* A simple palette of low-lying terrain gives visual unity and a strong sense of identity to the landscape.<br><br>*Health and Wellbeing:* Access within and connecting to the river corridors and their flood plains are important for biodiversity, geodiversity, recreation, and health benefits.<br><br>*Important Spatial Function:* The landform is low-lying with smooth low ridges that divide the shallow broad river valleys (vales) and their flood plains.<br><br>**Overall**, the value of Topography and Watercourses for the Cottam 1 Site/Sites is shaped by the intensive farming that has diminished the 'sense of place' in parts including the drainage of flood plains. The River Trent, the River Till and its network of tributaries, valleys, corridors, and flood plains are key features in the landscape. | *Character:* Medium landscape tolerance with some scope for change to landscape character. Enhancing the visibility of streams, dykes and other watercourses in the landscape would bring forward some positive benefits.<br><br>*Quality:* The most widespread change has been in agricultural intensification, where the change from pastoral to arable cropping has resulted in loss of hedges, and consequently increase in field sizes. The topography and watercourse therefore have a key role to play in helping to define the quality of the landscape.<br><br>*Value:* The River Till and its associated flood plains play an important role in the area for their recreational importance and in underpinning the character of the area.<br><br>*Capacity:* Features are evident, but they are locally commonplace. Some features make a minimal contribution to landscape character and scope for mitigation would therefore help to reinforce their prominence in the landscape. The landform is low-lying with smooth low ridges that divide the shallow broad river valleys (vales) and their flood plains and planting to reinforce this character would be a positive measure. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Panels to be set minimum of 20m from major watercourses and minimum of 8m from minor watercourses.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Wildflower meadow mix to be sown beneath proposed panels.<br><br>Scattered tree belts adjacent to watercourses to better define these features within the landscape. Open grass buffers adjacent to waterways for biodiversity and improved water quality.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium to Low (Site/Sites) | Medium to Low (Site/Sites) | **Medium** | |

| Landscape Receptor – Topography and Watercourses (Cottam 1 Site/Sites) | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited and would not affect the integrity of the waterways and local topography at all.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not adversely affect the land use. There would be a change to the arable land use which will be beneficial to soils and watercourses, significantly increase biodiversity and help to capture carbon. The field boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new panels.<br><br>Overall, the land use both within the Site and of the wider area is able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all features will be retained and enhancement at ground level through initial grassland planting will have beneficial effects from the outset. | This generally flat, low-lying Site at the Cottam 1 Site/Sites is part of the shallow broad river valleys locally and would benefit from the protection of minor waterways associated with the Trent and Till rivers as well as the man-made diches and dykes.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following changes to the landscape:<br><br><u>Cottam 1 North</u><br>A watercourse to the northeast of the Site is to be planted with a belt of riparian species trees in order to increase the presence of the watercourse across the local landscape where this currently does not feature prominently. An additional belt of trees is to be provided further west along a linear ditch/dyke.<br><br>Two long, informal watercourses run east/west across the Site and will be planted with riparian shelterbelt trees and shrubs to enhance the visual appearance of these features, significantly improved the biodiversity around them and further define them within the wider landscape. A further watercourse along the eastern boundary of the Site will provide additional tree cover and biodiversity benefits.<br><br><u>Cottam 1 South</u><br>This Site contains more linear water features which will benefit from significant enhancement through additional planting of scattered tree belts, and tall herb mix grassland buffers. Existing hedgerows will be improved through management and the introduction of native hedgerow trees.<br><br>To the west of the Cottam 1 Site/Sites, adjacent to the River Till, areas of floodplain meadow will be reinstated, creating a mosaic of wetland habitats along the river corridor with some grazing marsh, fens, and wet woodlands. Tree belts will be set back from the river corridor by a wide buffer of tall herb mix grassland to retain the open nature of the waterway and increase biodiversity.<br><br>These new riparian species trees and vegetation along the river corridors and their tributaries will increase the visual presence of the watercourse within the wider landscape as well as attenuating flood risk. Wide grassland margins will restore, enhance, or create river edge habitats for increased and protected biodiversity. | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east and west of the Cottam 1 Site/Sites will be screened in the close-mid proximity due to the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining and enhancing the overall character of the area.<br><br>The proposed grassland will have established and will have settled into its natural scheme with some minor appropriate management of differing regimes. The soil quality will be considerably improved through the lack of cultivation and the chemical run-off will be reduced around the Site(s) enhancing the water quality generally. There will be considerable biodiversity gains through the establishment of the varied grassland types and regimes and a long-term increase in pollinator species and bird and other species and numbers locally.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | The wide grassland buffers of a tall herb mixture, enhancing and protecting the existing native species for nature conservation, will reduce fertilizer and spray run-off improving water quality.<br><br>Long views from 'The Ridge' to the east will be retained and enhanced through strengthening of the overall character with increased tree, shelterbelt and boundary hedge planting helping to define the existing watercourses as well as the historical field patterns that would be enhanced where appropriate.<br><br>Overall, the structural condition of the soils and water quality locally will be greatly improved through the reversion of intensively managed arable land to mixed grassland, and carbon capture can be increased.<br><br>Overall, following mitigation at Year 1, the Site is able to accommodate the proposed change without undue adverse effects and will achieve some beneficial effects from the outset.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Topography and Watercourses:<br>- Grassland reversion around watercourses<br>- A more varied landscape<br>- Improved management of exiting vegetation<br>- Less intensively managed land around watercourses<br>- Soil improvements<br>- Water quality improvements<br>- Increased visibility/definition of watercourses across the landscape.<br>- Increased woodland/vegetation cover<br>- Increased riparian species vegetation<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Overwintering opportunities within wetland<br><br>Adverse effects (mitigated):<br>- Panels and structures across landscape<br>- Increased hard standing areas – water runoff management required<br>- Potential minor pollution around substations<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>Overall, following mitigation at Year 15, the Site is able to accommodate the proposed change without undue adverse effects and will achieve considerable beneficial effects in terms of soil and water improvements as well as improved carbon capture and significantly increased biodiversity around the Site. Changes to the land use would be seen as moderately beneficial in landscape terms.<br>**Overall**, in terms of mitigation for the Cottam 1 Site/Sites, due to the quality of the river systems in England, the aim is to improve water quality, availability, and flow. Other initiatives look to enhance the river systems and their floodplains for their ecological importance and contribution to biodiversity. The aim is to protect belts of waterside trees and riparian habitats to distinguish watercourses. The planting of trees and replacing lost hedgerows in flood plains to improve landscape character and attenuate flood flows is also promoted. | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |

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| **Level of Effect** | Neutral & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor** | | | | |
| **Magnitude** | Very Low | Low | Medium | Very Low |
| **Level of Effect** | Neutral & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Topography and Watercourses (Cottam 1 Site)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 1 Site with the other Cumulative Sites (Cottam 2 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes in the watercourses due to the scope for more grassland and scattered trees along their margins. The panels would be set back 20m minimum from major watercourses and this would allow scope for these scattered tree belts to follow the route and enable more visibility in the landscape. The existing landscape character associated with the fabric of the watercourses of the Cumulative Sites and Study Area is predominantly arable along their margins and the change to grassland with scattered trees and a significantly improved hedgerow structure would give rise to overall benefits to biodiversity as well as landscape character in the combination of all the Cumulative Sites.<br>.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual topography and watercourse elements or features of the landscape within the Cottam 1 Site/Sites. Wide panoramic views are possible, and the simple palette of land use and low-lying terrain gives visual unity and a strong sense of identity. The larger field systems are the key feature, especially where they form a geometric and regular pattern with thickly hedged fields.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam Power Station and the Cottam 1 Site/Sites and extending between the Cottam 1 Site/Sites and the Cottam 2 Site (the 'Cable Route Corridor').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.1 [C6.4.8.15.1.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the Cable Route Corridor, Cottam 2,and Cottam 3a and 3b Sites and the Cable Route Corridor would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these cumulative sites and the Cable Route Corridor. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Moderate with the Tillbridge Development and adverse, and adverse giving rise to likely **Significant** effects at year 1 of operation. The effects would be Minor at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the watercourses with scattered tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effects.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area within the character area<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cotton 1 Site/Sites and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 1 North, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the north of the Cottam 1 North Site, where their boundaries are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the watercourses. The presence of |

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| | There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites and Cottam 2 Site, located to the:<br>• east of Upton and to the south of Sturgate Airfield<br>• south of Kexby in the locality of Valley Farm<br>• east of Willingham by Stow in the locality of the residential property known as Carisbrooke<br>• east of Stow, just to the east of the property known as Tam Howes; and<br>• west of Sturton by Stow, extending from West Syke Lane as far as Normanby by Stow.<br><br>The topography and watercourse features within these areas are focused around the habitat associated with the River Till and its tributaries, which provides a strong feature running through the landscape to help in curtailing visibility across these areas.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2, and Cottam 3a Sites, located to the:<br>• northeast of Sturton by Stow, extending between Tillbridge Road and Ingham Road.<br><br>The topography and watercourse features within these areas are focused around the change from pastoral to arable cropping which has resulted in loss of hedges, and consequently increase in field sizes. Those surviving small scale fields around settlements such as Sturton by Stow are influenced by the meandering watercourses and therefore have a key role to play in helping to define the quality of the landscape and reducing visibility across the area.<br><br>There are local patches of intervisibility between All Sites comprising the landscape to the:<br>• east boundary of the Cottam 1 North Site, extending from Glentworth in the north as far as Ingham in the south.<br><br>The topography and watercourse features within these areas are influenced by the intensive farming that has diminished the 'sense of place' in parts including the drainage of flood plains and impact on the riparian vegetation and other habitats. Where watercourses survive, their associated vegetation helps to curtail visibility in this area. Public access is also limited to these features.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Topography and Watercourses*<br>Overall, the character of the landscape and the topography and watercourses is shaped by the predominance of medium and large-scale agriculture. Although this land use is commonplace, the linear water features and their tree cover are consistent features and can play a major role in curtailing the cumulative visibility across the area. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape and its topography and watercourse features. Moreover, these features play a positive role in reducing the overall cumulative effects. | the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 1 South Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.<br><br>The topography and watercourse features within these areas are focused around the change from pastoral to arable cropping which has resulted in loss of hedges, and consequently increase in field sizes. Those surviving small scale fields around settlements such as Sturton by Stow are influenced by the meandering watercourses and therefore have a key role to play in helping to define the quality of the landscape and reducing visibility across the area.<br><br>*Overall Landscape Character of the Topography and Watercourses*<br>Overall, the character of the landscape and the topography and watercourses is shaped by the predominance of medium and large-scale agriculture. Although this land use is commonplace, the linear water features and their tree cover are consistent features and can play a major role in curtailing the cumulative visibility across the area. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape and its topography and watercourse features. Moreover, these features play a positive role in reducing the overall cumulative effects. |

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| | The difference in effect between the addition of the Scheme to the cumulative baseline is low for the Cumulative Sites because there are minor patches of small cumulative change to a limited area of medium sensitivity, affecting some characteristics without altering the overall impression of its character. | |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Medium<br>Operation (Year 1): Medium<br>Operation (Year 1) **with only** Embedded Mitigation: Medium<br>Operation (Year 15): Low<br>Decommissioning: Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Moderate **Significant**<br>Operation (Year 1): Moderate **Significant**<br>Operation (Year 1) **with only** Embedded Mitigation**:** Moderate**Significant**<br>Operation (Year 15): Minor **Not Significant**<br>Decommissioning: Minor **Not Significant** |

| Landscape Receptor – Topography and Watercourses (Cottam 2 Site) |
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| **Receptor Baseline:**<br><br>Within the Cottam 2 Site, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends across the entirety of the 2km Study Area and then extends into the 5km Study Area where at its eastern most edge it shares a boundary with RLCT Profile: 6a Limestone Scarps and Dipslopes. The western extent of the 5km Study Area is also host to a large part of RLCT Profile: 4b Wooded Vales.<br><br>**Key Features:**<br><br>The landscape is characterized by a low-lying terrain, centred on the River Trent with a notable topographical feature that lies to the east where the landform rises to create a distinctive sloping ridge forming a prominent landform. This landform is described as the 'Edge', the 'Cliff' or the 'Lincolnshire Edge' and along it there is a linear line of small villages. The powerful River Trent and its flood plain provide a strong feature running through the landscape. The River Till is also a key watercourse, and its upper reaches drain the land to the east of Gainsborough and is ultimately a tributary of the River Witham. The middle section of the River Till is embanked between Saxilby in the south as far as Sturton by Stow in the north, as the water level is higher than that of the surrounding land. At the lower stretches near Lincoln, the River Till is canalised where it joins with Foss dyke.<br><br>The Site within Cottam 2 (2km Study Area) consists primarily of a landscape that is generally flat, with levels of approximately 20m AOD across most parts. The landscape rises to approximately 25m AOD at the small hamlet of Yawthorpe to the northeast of Yawthopre Beck. The landscape also rises to 25m AOD in the south around Springthorpe Grange, and to the south of Harpswell Lane at Harpswell Grange. This river system forms part of a gently undulating and low-lying landform in the main, with low ridges dividing shallow, broad river valleys, vales, and flood plains. Ditches feed into the wider drainage network of the River Till which flows into the Foss dyke, and Corringham Beck also forms a larger watercourse that bounds the landscape to the northwest. Drainage ditches feed into the wider drainage network of the River Till and are a feature of the area. To the north of the area is Aisby Beck and Yawthorpe Beck. The River Till rises as a series of streams close to the 20m AOD contour just to the east of Corringham. Its course heads south, passing under a bridge near Heapham Windmill, then flowing to the west of the village. Many tributaries pass across the landscape, and some are fed by field drains which often follow a north south direction. The landform becomes more rolling and the landscape more enclosed by hedgerows and trees towards the west around Corringham. In contrast, towards the east, the landscape takes on a flatter landform. |

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
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| In terms of forces for change for the Cottam 2 Site (Topography and Watercourses), recent trends have shown that there is pressure for built development in villages within commuting distance of Lincoln and the most sensitive parts of the landscape are the minor steams and their associated riparian vegetation.<br><br>**Overall,** the susceptibility of the Topography and Watercourses for the Cottam 2 Site is conditioned by the need to retain buffer zones along rivers and streams to enhance their nature conservation value and reduce fertilizer/pesticide runoff from arable land. However, there is an opportunity for new tree/scrub planting (goat willow, hawthorn, alder, and alder buckthorn) along rivers, streams and ditches to increase their visual presence in the landscape. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects given there is scope to restore/enhance/create river habitats and river margins including some naturalisation of some of the watercourses. | *Scenic:* The area supports an extensive network of rivers, dykes and ditches, which have little visual presence in the landscape since they are contained by high flood banks and lack significant riparian vegetation.<br><br>*Cultural:* Parts of the landscape have remained unchanged, and this is particularly noticeable for some of the rural lanes where hedgerows are bordered by traditional meadowlands and the lanes leading down to the riverside as former connections for ferrymen and cattle across the River Trent still survive.<br><br>*Natural:* The watercourses have been hugely modified for flood management and navigational purposes. The vast majority of the natural flood plain is now separated from these watercourses by large flood embankments. In most areas the watercourses form a deep wide channel with little in-stream habitat.<br><br>*Recreation and Enjoyment:* The public right of way (PRoW) network is limited with many areas that are hard to access, making it difficult for people to enjoy the landscape.<br><br>*Local Distinctiveness and Sense of Place:* The landscape supports a peaceful, undisturbed rural character where the meandering river channels (although not highly visible) hold remnant patches of riparian vegetation.<br><br>*Health and Wellbeing:* The landscape has retained a relatively remote and undeveloped character, but when promoting access, the right balance between conserving the rural character and access for recreation needs to be considered.<br><br>*Important Spatial Function:* The watercourses themselves are not a visually dominant feature with the flood banks and hedgerows shielding them from view.<br><br>**Overall**, the value of Topography and Watercourses for the Cottam 2 Site is shaped by a low-lying flat agricultural landscape characterised by large areas of former River Meadow lands that have now been converted to arable land. This arable land encroaches down to the river channels in some areas, disrupting the unity of the watercourses. | *Character:* This is shaped by the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Quality:* The vast majority of the natural flood plain is now separated from these watercourses by large flood embankments. In most areas the watercourses form a deep wide channel with little in-stream habitat.<br><br>*Value:* Whilst the landform of the Unwooded Vales is typically low and subdued, slightly rising landform between watercourses often provides locations where glimpses of neighboring elevated lands are often sufficient to provide a sense of place and add to the recreation and enjoyment of the area.<br><br>*Capacity:* Features are locally commonplace and in moderate condition. Although the remaining hedgerow network is generally strong, there is nevertheless evidence of decline in several areas, with gaps and few hedgerow trees. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Panels to be set minimum of 20m from major watercourses and minimum of 8m from minor watercourses.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |

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| Medium to Low (Site/Sites) | Medium to Low (Site/Sites) | **Medium** | |

| **Landscape Receptor – Topography and Watercourses (Cottam 2 Site)** | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited and would not affect the integrity of the waterways and local topography at all.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not affect the watercourses or topography of the area although there may be some limited run-off. There would be a change to the arable land use which will be beneficial to soils and watercourses, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. There would not be a fundamental change to the surroundings to the views and settings of these landscape receptors,<br><br>Overall, the topography and watercourses are able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all features will be retained and enhancement at ground level through initial grassland planting will have beneficial effects from the outset. | This generally flat, low-lying Site at Cottam 2 is part of the shallow broad river valleys locally and would benefit from the protection of minor waterways associated with the Trent and Till rivers as well as the man-made diches and dykes.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following changes to the landscape:<br><br>Wildflower meadow mix to be sown beneath proposed panels.<br><br>Scattered tree belts adjacent to watercourses to better define these features within the landscape. Open grass buffers adjacent to waterways for biodiversity and improved water quality.<br><br>Scattered tree belts running adjacent to the watercourse to the east of the Site will sit back beyond a grassland buffer of a tall herb mixture, enhancing and protecting the existing native species for nature conservation and reduce fertilizer and spray run-off improving water quality. These belts will create strong green corridors across the landscape which will link to adjacent copses and field boundary hedgerows.<br><br>Across the Site, linear ditches and dykes which are currently abutted by vegetation will be enhanced to further delineate the field boundaries and minor watercourses as well as adding to the green corridors and biodiversity value.<br><br>These new riparian species trees and vegetation along the rivers will increase the visual presence of the watercourse within the wider landscape as well as attenuating flood risk. Wide grassland margins will restore, enhance, or create river edge habitats for increased and protected biodiversity.<br><br>Long views from 'The Ridge' to the east will be retained and enhanced through strengthening of the overall character with increased tree and boundary hedge planting, enhancing the historical field patterns that have been reinstated.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and grassland will be well established. | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east, and west of the Site will be screened in the close-mid range through the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality hedgerows both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining and enhancing the overall character of the area.<br><br>The proposed grassland will have established and will have settled into its natural scheme with some minor appropriate management of differing regimes. The soil quality will be considerably improved through the lack of cultivation and the chemical run-off will be reduced around the Site(s) enhancing the water quality generally. There will be considerable biodiversity gains through the establishment of the varied grassland types and regimes and a long-term increase in pollinator species and bird and other species and numbers locally.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | Overall, the structural condition of the soils and water quality locally will be greatly improved through the reversion of intensively managed arable land to mixed grassland, and carbon capture can be increased.<br><br>Overall, following mitigation at Year 1, the Site is able to accommodate the proposed change without undue adverse effects and will achieve some beneficial effects from the outset.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Topography and Watercourses:<br>- Grassland reversion around watercourses<br>- A more varied landscape<br>- Improved management of exiting vegetation<br>- Less intensively managed land around watercourses<br>- Soil improvements<br>- Water quality improvements<br>- Increased visibility/definition of watercourses across the landscape.<br>- Increased woodland/vegetation cover<br>- Increased riparian species vegetation<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Overwintering opportunities within wetland<br><br>Adverse effects (mitigated):<br>- Panels and structures across landscape<br>- Increased hard standing areas – water runoff management required<br>- Potential minor pollution around substations<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>Overall, following mitigation at Year 15, the Site is able to accommodate the proposed change without undue adverse effects and will achieve considerable beneficial effects in terms of soil and water improvements as well as improved carbon capture and significantly increased biodiversity around the Site. Changes to the land use would be seen as moderately beneficial in landscape terms.<br><br>**Overall**, in terms of mitigation for the Cottam 2 Site, due to the shift away from mixed farming, this has had an impact on local character and in regulating water quality. There are also measures to protect and enhance belts of waterside trees and riparian habitats to distinguish watercourses, planting trees and replacing lost hedgerows in flood plains to improve landscape character and attenuate flood flows. | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |

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| **Level of Effect** | Neutral & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor-Moderate **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Very Low | Low | Medium | Very Low |
| **Level of Effect** | Neutral & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Topography and Watercourses (Cottam 2 Site)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 2 Site with the other Cumulative Sites (Cottam 1 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes in the watercourses due to the scope for more grassland and scattered trees along their margins. The panels would be set back 20m minimum from major watercourses and this would allow scope for these scattered tree belts to follow the route and enable more visibility in the landscape. The existing landscape character associated with the fabric of the watercourses of the Cumulative Sites and Study Area is predominantly arable along their margins and the change to grassland with scattered trees and a significantly improved hedgerow structure would give rise to overall benefits to biodiversity as well as landscape character in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual topography or watercourse elements or features of the landscape within the Cottam 2 Site. The wider landscape is typified by a low-lying flat agricultural landscape characterised by large areas of former River Meadow lands that have now been converted to arable land. This arable land encroaches down to the river channels in some areas, disrupting the unity of the watercourses.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridor').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.2 [C6.4.8.15.1.2]** which shows that with the Cottam 2 Site, cumulative visibility with the Cottam 1 Site/Sites and Cottam 3a and 3b Sites would not be experienced across the entirety of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of intervisibility between the Cottam 2 Site and with the 3a and Cottam 3b Sites extending from the:<br>• South boundary of the Cottam 2 Site, starting at the eastern edge of Corringham and reaching as far as Yawthorpe Beck and the settlement of Yawthorpe<br>• West boundary of the Cottam 2 Site, extending as far as Pilham Lane<br>• East boundary of the Cottam 2 Site, extending as far Yawthorpe and Yawthorpe Fox Covert | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Moderate with the Tillbridge Development and adverse, giving rise to likely **Significant** effects at year 1 of operation. The effects would be Minor at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the watercourses with scattered tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effects.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual topography or watercourse elements or features of the landscape within the Cottam 2 Site. The wider landscape is typified by a low-lying flat agricultural landscape characterised by large areas of former River Meadow lands that have now been converted to arable land. This arable land encroaches down to the river channels in some areas, disrupting the unity of the watercourses.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridor').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.2 [C6.4.8.15.2.2]** which shows that with the Cottam 2 Site, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 2 Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 2, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 2 Site, where their boundaries are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the watercourses. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and |

- Northwest boundary of the Cottam 2 Site/Sites, extending as far as the Cottam 3a and 3b Sites.

Aisby Beck is located to the north of the Cottam 2 Site. These local becks feed into the wider drainage network of the River Till which flows into the Foss Dyke, and Corringham Beck also forms a larger watercourse that bounds the landscape to the northwest of Cottam 2 Site. These watercourses are key features that contribute to reduced visibility across the landscape.

There is a local patch of intervisibility between the Cottam 2 Site and with the Cottam 3b Site, comprising the:

- Northern-most tip of the Cottam 2 Site extending across the medieval village of Dunstall as far as the medieval village of Southorpe and Yawthorpe; and
- Southeast of the River Eau, extending as far as Huckerby Farm and Huckerby Bungalows.

The landscape rises to approximately 25m AOD at the small hamlet of Yawthorpe to the northeast of Yawthopre Beck. The landscape also rises to 25m AOD in the south around Springthorpe Grange, and to the south of Harpswell Lane at Harpswell Grange. This river system forms part of a gently undulating and low-lying landform in the main, with low ridges dividing shallow, broad river valleys, vales, and flood plains. These local undulations provide a deceptive contribution to a reduction in visibility across the landscape.

There are local patches of intervisibility between All Sites comprising the:

- North of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe
- West of the settlement of Corringham, extending from Staplegate House as far Windy Ridge on Pilham Lane
- West of Springthorpe, extending across the landscape as far as Harpswell Low Farm; and
- East of Yawthorpe, extending as far as Hemswell.

This is part of the landscape is shaped by the low hills and ridges that form watersheds between the watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views and help mitigate cumulative visibility.

Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:

**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**
**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**
**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**

**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**
**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**

**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**
**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**

**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**
**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**

*Overall Landscape Character of the Topography and Watercourses*
Overall, the character of the landscape and the topography and watercourses is shaped by drainage ditches that feed into the wider drainage network of the River Till and are a feature of the area. To the north of the area is Aisby Beck and Yawthorpe Beck. The River Till rises as a series of streams close to the 20m AOD contour just to the east of Corringham. Its course heads south, passing under a bridge near Heapham Windmill, then flowing to the west of the village. Many tributaries pass across the landscape, and some are fed by field drains which often follow a north south direction. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its and topography and watercourses features. Moreover, these features play a positive role in reducing the overall cumulative effects.

secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.

**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 2 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.

The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.

The topography and watercourse features within these areas are focused around the change from pastoral to arable cropping which has resulted in loss of hedges, and consequently increase in field sizes. Those surviving small scale fields around settlements such as Sturton by Stow are influenced by the meandering watercourses and therefore have a key role to play in helping to define the quality of the landscape and reducing visibility across the area.

*Overall Landscape Character of the Topography and Watercourses*
Overall, the character of the landscape and the topography and watercourses is shaped by drainage ditches that feed into the wider drainage network of the River Till and are a feature of the area. To the north of the area is Aisby Beck and Yawthorpe Beck. The River Till rises as a series of streams close to the 20m AOD contour just to the east of Corringham. Its course heads south, passing under a bridge near Heapham Windmill, then flowing to the west of the village. Many tributaries pass across the landscape, and some are fed by field drains which often follow a north south direction. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its and topography and watercourses features. Moreover, these features play a positive role in reducing the overall cumulative effects.

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|---|---|---|
| | effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its and topography and watercourses features. Moreover, these features play a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is low for the Cumulative Sites because there are minor patches of small cumulative change to a limited area of medium sensitivity, affecting some characteristics without altering the overall impression of its character. | |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Medium Operation (Year 1): Medium<br>Operation (Year 1) **with only** Embedded Mitigation: Medium<br>Operation (Year 15): Low<br>Decommissioning: Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Moderate **Significant**<br>Operation (Year 1): Moderate **Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Moderate **Significant**<br>Operation (Year 15): Minor **Not Significant**<br>Decommissioning: Minor **Not Significant** |

**Landscape Receptor – Topography and Watercourses (Cottam 3a and 3b Site)**

**Receptor Baseline:**
Within the Cottam 3a and 3b Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends into the eastern section of the 2km Study Area and shares a boundary with the 'Built Up Area' that extend eastwards from Gainsborough towards Blyton following the main transport route of the A159 (Thonock Road). The Unwooded Vales also extends into the 5km Study Area and shares a boundary with RLCT Profile 6a: Limestone Scarps and Dipslopes. The settlements of Grayingham, Blyborough, Willhoughton and Hemswell are located close to the 5km Study Area boundary with RLCT Profile 4a: Unwooded Vales and RLCT 6a: Limestone Scarps and Dipslopes.

The sites within Cottam 3 can be sub-divided into two distinct land areas:

- Cottam 3a
- Cottam 3b

**Key Features:**

The landscape is generally flat, with topography varying only very slightly in elevation, typically with levels of approximately 20m AOD similar to the outlying landscape, although there are some minor undulations of landform to the northeast between the settlements of Northorpe and Scotton that undulate around the flood plain of the River Eau and its various tributaries. A notable topographical feature is located to the east where the land rises to form a distinctive sloping ridge. This is a dominant landform where the scarp slope rises prominently from adjacent low-lying land forming the Edge or the Cliff where a series of small villages follow the ridgeline. The Edge forms a watershed between the major catchments of the Trent and Ancholme, both of which flow into the Humber, and the Witham, which flows into the Wash. The area supports several spring-fed small rivers where an important aquifer underlies the whole limestone ridge. The alignment of roads tend to follow the watercourses, for example Laughton Road, which takes a north-east route from Gainsborough, is almost true to the River Trent and passes through the settlements of Laughton and Laughton Common before reaching the A159 (Laughton Road). Smaller historic settlements are also located in close proximity to the River Trent and these include Walkerith, East Stockwith and Wildsworth where there are few trees and no churches.

Cottam 3a
The landform is generally flat with levels around 20m AOD and then falling gradually to the north towards Northorpe Beck. Beyond Northorpe Beck the landform retains a generally flat gradient at around 20m AOD. The fissured nature of the underlying rock means that there are few surface streams and groundwater percolates into the limestone to emerge as springs where it meets the underlying impermeable mudstones at the foot of the scarp. Several farms have constructed reservoirs to provide water for irrigation and these are particularly common within the flood plain of the River Eau. The River Eau drains into the River Witham and ultimately the Wash.

Cottam 3b
To the south of the railway line, the primary watercourse comprises the tributaries of the River Till which run in all directions and are divided by areas of geometric woodland. Aisby Beck and Corringham Beck cuts across the area to the north and then to the south of Aisby. Man-made, rectilinear drains are a characteristic of the area to the south of the railway line with an absence of natural, meandering watercourses. Other substantial drainage features include Laughton Drain, Highfield Drain and Northorpe Beck. Many of the tributaries pass through the Medieval settlements of Southorpe Village, Dunstall Village and Gilby Village.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change for Cottam 3a and 3b (Topography and Watercourses), recent trends have shown that the watercourses and their tributaries are often impinged from following natural courses. There are constraints around introducing structural diversity into the river habitats, where geomorphological processes should be allowed to occur, thus also reducing the energy of flood flows, and increasing flood storage capacity. The increasing demand for water resources in an area of low rainfall may limit agriculture, and/or impact on water quality and freshwater habitats.<br><br>**Overall,** the susceptibility of the Topography and Watercourses for the Cottam 3a and 3b Sites is potentially conditioned by climate change may bring drier summers, and which would exacerbate the low summer flows of the rivers in this area. This would impact on water quality and freshwater habitats, as well as reducing the availability of water. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects given there is scope to incorporate measures into cultivation to improve the structural condition of soils, for example by increasing the area of permanent grassland. The construction of reservoirs on farms to supply water for irrigation could be designed to enhance biodiversity and make a positive contribution to the landscape. | *Scenic:* The area has a peaceful nature and has managed to retain a relatively remote and undeveloped character, giving the landscape an impression of naturalness.<br><br>*Cultural:* The Lincolnshire Limestone aquifer is regionally important and large demands are placed upon it to meet domestic, industry and agricultural water supplies as well as supporting base flows to rivers and supporting local surface features.<br><br>*Natural:* Wetland habitats are limited to a few wet woodlands and small areas of grazing marsh.<br><br>*Recreation and Enjoyment:* Restoration schemes promote new open water and wetland habitats, and these are managed to contribute to the local landscape and enhance biodiversity interest. Ironstone, limestone, and sand have all been exploited in this area and workings have been restored to form a rich mosaic of heathland, grassland, and woodland, with some stretches of open water.<br><br>*Local Distinctiveness and Sense of Place:* There are few watercourses in the wider landscape but there are springs and flushes at the edges of the limestone plateau where the water meets the underlying impermeable layers.<br><br>*Health and Wellbeing:* Some of the restored sand and ironstone extraction sites offer open water and semi-natural habitats for both informal quiet recreation and 2rganized sports.<br><br>*Important Spatial Function:* The area supports several rectilinear reservoirs for irrigation supplies.<br><br>**Overall**, the value of Topography and Watercourses for the Cottam 3a and 3b Sites is shaped by the presence of springs and flushes. There are areas of open water and objectives for freshwater habitat nature conservation are to avoid damage to wetland and riverine habitats by over-abstraction of water. | *Character:* The roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Blyton Beck, provide local points of interest and the opportunity to capture views across the landscape.<br><br>*Quality:* To the south of the railway line, the primary watercourse comprises the tributaries of the River Till which run in all directions and are divided by areas of geometric woodland, and this enhances the quality of the landscape in contrast to the landscape to the north of the railway line.<br><br>*Value:* Areas have a positive landscape character but include some areas of degradation where agricultural intensification has eroded landscape character, particularly in the context of the watercourses where riparian vegetation is sparse.<br><br>*Capacity:* The landscape benefits from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. In contrast, the watercourses tend to have a more open setting making them more susceptible to change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Panels to be set minimum of 20m from major watercourses and minimum of 8m from minor watercourses.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Let existing hedges grow out and managed at 5m. Encourage hedgerow trees to grow out within existing hedges to add further thickening and growth within the field boundaries.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium to Low (Site/Sites) | Medium to Low (Site/Sites) | **Medium** | |

| Landscape Receptor – Topography and Watercourses (Cottam 3a and 3b Sites) | | | | |
|---|---|---|---|---|
| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited and would not affect the integrity of the waterways and local topography at all.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not affect the watercourses or topography of the area although there may be some limited run-off. There would be a change to the arable land use which will be beneficial to soils and watercourses, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. There would not be a fundamental change to the surroundings to the views and settings of these landscape receptors,<br><br>Overall, the topography and watercourses are able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all features will be retained and enhancement at ground level through initial grassland planting will have beneficial effects from the outset. | This generally flat, low-lying Site at the Cottam 3a and 3b Sites is part of the shallow broad river valleys locally and would benefit from the protection of minor waterways associated with the Trent and Till rivers as well as the man-made diches and dykes.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following changes to the landscape:<br><br>Wildflower meadow mix to be sown beneath proposed panels.<br><br>Scattered tree belts adjacent to watercourses to better define these features within the landscape. Open grass buffers adjacent to waterways for biodiversity and improved water quality.<br><br><u>Cottam 3a</u><br>A small number of linear man-made ditches and dykes exist across the Site that would benefit from some enhancement including a less formal watercourse to the east of the Site which is to be planted with successive scrub to provided biodiversity and improve the presence of the watercourse locally within the landscape.<br><br>A wide grassland buffer of a tall herb mixture, enhancing and protecting the existing native species for nature conservation will reduce fertilizer and spray run-off improving water quality.<br><br>Across the Site, linear ditches and dykes which are currently abutted by vegetation will be enhanced to further delineate the field boundaries and minor watercourses as well as adding to the green corridors and biodiversity value.<br><br>These new riparian species trees and vegetation along the rivers will increase the visual presence of the watercourse within the wider landscape as well as attenuating flood risk. Wide grassland margins will restore, enhance, or create river edge habitats for increased and protected biodiversity.<br><br><u>Cottam 3b</u><br><br>The Site does not contain any watercourses.<br><br>Long views from 'The Ridge' to the east will be retained and enhanced through strengthening of the overall character with increased tree, shelterbelt, and | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br>Views to the north, south, east, and west of the Cottam 3a and 3b Site/Sites will be screened in the close-mid range through the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality hedgerows both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining and enhancing the overall character of the area.<br><br>The proposed grassland will have established and will have settled into its natural scheme with some minor appropriate management of differing regimes. The soil quality will be considerably improved through the lack of cultivation and the chemical run-off will be reduced around the Site(s) enhancing the water quality generally. There will be considerable biodiversity gains through the establishment of the varied grassland types and regimes and a long-term increase in pollinator species and bird and other species and numbers locally.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has begun to mature to create a much stronger and robust landscape, retaining and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields are likely to be retaining and the potential may exist to retain grass margins to retain some varied land use and maintain a high level of biodiversity in the local area. |

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| | | boundary hedge planting, enhancing the historical field patterns that have been reinstated as well as local watercourses.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and grassland will be well established.<br><br>Overall, the structural condition of the soils and water quality locally will be greatly improved through the reversion of intensively managed arable land to mixed grassland, and carbon capture can be increased.<br><br>Overall, following mitigation at Year 1, the Site is able to accommodate the proposed change without undue adverse effects and will achieve some beneficial effects from the outset.<br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Topography and Watercourses:<br>- Grassland reversion around watercourses<br>- A more varied landscape<br>- Improved management of exiting vegetation<br>- Less intensively managed land around watercourses<br>- Soil improvements<br>- Water quality improvements<br>- Increased visibility/definition of watercourses across the landscape.<br>- Increased woodland/vegetation cover<br>- Increased riparian species vegetation<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Overwintering opportunities within wetland<br><br>Adverse effects (mitigated):<br>- Panels and structures across landscape<br>- Increased hard standing areas – water runoff management required<br>- Potential minor pollution around substations<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but | Overall, following mitigation at Year 15, the Site is able to accommodate the proposed change without undue adverse effects and will achieve considerable beneficial effects in terms of soil and water improvements as well as improved carbon capture and significantly increased biodiversity around the Site.<br><br>**Overall,** in terms of mitigation for the Cottam 3a and 3b Sites, the aim is to manage land adjacent to wet woodland and other wetland habitats to buffer them and maintain their hydrology, thus retaining them as landscape features and enhancing their biodiversity interest. The aim is also to identify, maintain and enhance the springs and flushes on the edges of the limestone. There is also the opportunity to establish permanent uncultivated strips alongside watercourses and expansion of wetland to improve carbon capture. | |

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| | | will have had limited physical impact at this stage. | | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Neutral & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Very Low | Low | Medium | Very Low |
| **Level of Effect** | Neutral & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Topography and Watercourses (Cottam 3a and 3b Sites)** | | |
|---|---|---|
| | **In-combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 3a and 3b Sites with the other Cumulative Sites (Cottam 1 and 2) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes in the watercourses due to the scope for more grassland and scattered trees along their margins. The panels would be set back 20m minimum from major watercourses and this would allow scope for these scattered tree belts to follow the route and enable more visibility in the landscape. The existing landscape character associated with the fabric of the watercourses of the Cumulative Sites and Study Area is predominantly arable along their margins and the change to grassland with scattered trees and a significantly improved hedgerow structure would give rise to overall benefits to biodiversity as well as landscape character in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual topography and watercourse elements or features of the landscape within Cottam 3a and 3b. The wider landscape is typified by roads and watercourses that combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Blyton Beck, provide local points of interest and the opportunity to capture views across the area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site/ and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridor').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3b Site, cumulative visibility with the Cottam 1 Site/Sites, Cottam 2 Site and Cottam 3b Site would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Moderate with the Tillbridge Development and adverse, and adverse giving rise to likely **Significant** effects at year 1 of operation. The effects would be Minor at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the watercourses with scattered tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effects.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual topography and watercourse elements or features of the landscape within the Cottam 3a and 3b Sites. The wider landscape is typified by roads and watercourses that combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Blyton Beck, provide local points of interest and the opportunity to capture views across the area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridor').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a and 3b Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 3a Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures: |

tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.

There are local patches of intervisibility between the Cottam 3a and 3b Sites, extending from the:

- Northeast boundary of the Cottam 3a Site, defined to the west by the Green Respect Burial Park and Park House Farm, and reaching as far as Northorpe in the east
- East boundary of Cottam 3a Site, and stopping short of Cold Harbour Farm; and
- North boundary of the Cottam 3b Site, extending for a short distance as far as Grange Farm and Top Farm.

Despite the concentration of straight roads that cut bluntly across the open arable landscape, there are some minor undulations of landform to the northeast between the settlements of Northorpe and Scotton that undulate around the flood plain of the River Eau and its various tributaries. A notable topographical feature is located to the east where the land rises to form a distinctive sloping ridge. These local undulations help to close down visibility across the landscape.

There are local patches of intervisibility between the Cottam 3a, 3b and Cottam 2 Sites, extending from the:

- South boundary of the Cottam 3b Site, bordered by Pilham to the west and the medieval settlement of Dunstall to the east, and reaching as far as Springthorpe in the south
- South boundary of the Cottam 3a Site, bordered by the eastern edge of Blyton to the west, reaching Grange Farm and stopping short of the mainline railway; and
- North boundary of the Cottam 3a Site, following the alignment of the A159 (Laughton Road) and stopping short to the west of the Green Respect Burial Park.

The natural features however, such as the meandering watercourses and smaller scale field systems bring a tighter grain and added layers to the landscape, which helps curtail views across the area. The alignment of roads tend to follow the watercourses, for example Laughton Road, which takes a north-east route from Gainsborough, is almost true to the River Trent and passes through the settlements of Laughton and Laughton Common before reaching the A159 (Laughton Road).

There is a local patch of intervisibility between All Sites, located to the:

- East of the Cottam 3b Site/ and north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe.

To the south of the railway line, the primary watercourse comprises the tributaries of the River Till which run in all directions and are divided by areas of geometric woodland, and this enhances the quality of the landscape and its ability to provide enclosure and intimacy, in contrast to the landscape to the north of the railway line.

Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:

**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**
**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**
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**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**
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**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**
**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**

**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**

**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 3a and 3b, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.

**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 3a and 3b Sites, where the boundaries with Cottam 2 are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the watercourses. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.

**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 3a and 3b Sites where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, and where their presence will impair any associated landscape context with the West Burton Site.

The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.

The topography and watercourse features within these areas are focused around the change from pastoral to arable cropping which has resulted in loss of hedges, and consequently increase in field sizes. Those surviving small scale fields around settlements such as Sturton by Stow are influenced by the meandering watercourses and therefore have a key role to play in helping to define the quality of the landscape and reducing visibility across the area.

*Overall Character of the Landscape and Topography and Watercourses*
Overall, the character of the landscape and the topography and watercourses is shaped by a landscape that benefits from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. In contrast, the watercourses tend to have a more open setting making them more susceptible to change. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3a and 3b Sites would not alter the character of the landscape and its land use features. Moreover, these features play a positive role in reducing the overall cumulative effects.

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| | **Appendix 8.3.5.3** Individual ProW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape and Topography and Watercourses*<br>Overall, the character of the landscape and the topography and watercourses is shaped by a landscape that benefits from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. In contrast, the watercourses tend to have a more open setting making them more susceptible to change. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3a and 3b Sites would not alter the character of the landscape and its land use features. Moreover, these features play a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is low for the Cumulative Sites because there are minor patches of small cumulative change to a limited area of medium sensitivity, affecting some characteristics without altering the overall impression of its character. | |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation**:** Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Medium<br>Operation (Year 1): Medium<br>Operation (Year 1) **with only** Embedded Mitigation: Medium<br>Operation (Year 15): Low<br>Decommissioning: Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation**:** Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation**:** Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Moderate **Significant**<br>Operation (Year 1): Moderate **Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Moderate **Significant**<br>Operation (Year 15): Minor **Not Significant**<br>Decommissioning: Minor **Not Significant** |

**Landscape Receptor – Communication and Infrastructure (Cottam 1 Site/Sites)**

**Receptor Baseline:**

Within the Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends across the majority of the 2km and 5km Study Area apart from the eastern most edge where it shares a boundary with RLCT Profile: 6a Limestone Scarps and Dipslopes. The western extent of the 5km Study Area is also host to a small part of RLCT Profile 3a: Floodplain Valleys and RLCT Profile: 4b Wooded Vales.

The Site/Sites within Cottam 1 (2km Study Area) can be sub-divided into two distinct land areas:

- Cottam 1 North
- Cottam 1 South

**Key Features:**

The communications and infrastructure network are broadly defined to the north by the A156 (Gainsborough Road) which takes an informal alignment across the landscape serving the smaller settlements of Corringham, Hemswell, Harpswell and Hemswell Cliff, and then connects the larger settlements of Gainsborough with Market Rasen. To the south, the A1500 (Tillbridge Road), a Roman road follows a well-defined straight route and is orientated in a broad northwest to southeast alignment across the landscape. To the east, the landscape is defined by the A15 (Ermine Street), which is also a Roman road following a distinctive straight alignment along the limestone capped scarp slope. The B1398 (Middle Street) also passes along the scarp slope following an almost parallel alignment with Ermine Street. Finally, to the west, the B1241 (Normanby Road, Stow Road then Willingham Road) passes through the settlements of Sturton by Stow, Stow, Normanby by Stow, Willingham by Stow, Kexby and Upton.

Cottam 1 North:
This is an area of land that is broadly defined to the north by the local network comprising Glentworth Road and Kexby Road, which passes through the landscape in an east west direction with several right-angled bends. This local road network connects the smaller settlements of Kexby in the west with Glentworth in the east. To the south of the Site/Sites, Ingham Road runs in an east west direction and forms part of the local road network with a clearly defined straight alignment. This local road network connects the settlements of Stow in the west with Ingham and Ingham Cliff in the east. Ingham road serves several farmsteads and isolated dwellings including Furze Hill, Blackthorn Hill, and The Pastures. To the east, the B1398 (Middle Street) forms an almost continuous and well-defined edge to the Site/Sites and is a strong feature within the landscape where the landform rises distinctly to form the limestone capped scarp slope. To the west, the Site/Sites are defined by the B1241, which follows the almost meandering course of the River Till. To the central part of the Site/Sites, the small settlement of Coates is served via a minor road network that also provides access to several farmsteads and isolated dwellings including Grange Farm, Hall Farm Presswood Cottages and Coates Hall. Within this central part, Fillingham Lane leads into Willingham Road and this route is also part of the local road network passing east to west across the area linking the settlements of Willingham by Stow in the west to Fillingham in the east. This local road network serves several farmsteads and isolated dwellings including Carisbrooke, Slate House Farm, Magin Moor Farm, Poplar Farm, Turpin Farm, Side Farm, Greystones Farm and Glebe Farm.

Cottam 1 South:
This is an area of land that is broadly defined to the north by Ingham Road, which runs in an east west direction and forms part of the local road network with a clearly defined straight alignment. This local road network connects the settlements of Stow in the west with Ingham and Ingham Cliff in the east. Ingham road serves several farmsteads and isolated dwellings including Furze Hill, Blackthorn Hill, and The Pastures. To the south, the boundary of the Site/Sites is defined by Thorpe Lane, which forms part of the local road network that connects the settlements of Sturton by Stow with Brattleby and Aisthorpe. Thorpe Lane serves a small number of dwellings and farmsteads including Clandon House, The Lodge, Thorpe Lane Farm and Glebe Buildings. To the east, the B1398 (Middle Street) forms an almost continuous and well-defined edge and is a strong feature within the landscape where the landform rises distinctly to form the limestone capped scarp slope. To the west, the Site/Sites are defined by Fleets Lane which forms part of the local road network linking the settlements of Sturton by Stow with Stow Pasture. The lane runs in a straight north direction and serves only one property known as Fleets Cottages. To the central part of the Site/Sites, there is a local lane leading west from Cammeringham that serves two properties known as Cold Harbour and Blackthorn Hill.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change for the Cottam 1 Site/Sites (Communications and Infrastructure), recent trends have shown that significant infrastructure development pressures exist from the main settlements and roads that traverse the area. The challenges are to conserve the tranquility of the area through careful planning that minimises road construction, car use and disturbance, and provides sustainable transport options and well-designed green infrastructure.<br><br>**Overall**, the susceptibility of the Communications and Infrastructure for the Cottam 1 Site/Sites is conditioned by the sensitivity of the rural roads and minor tracks, lanes and farm roads that are bordered by wide verges. Driving north to south across the area is relatively straightforward as the A156 runs fairly true to the River Trent and the B1241 follows the almost meandering course of the River Till. Most of the developed settlements are near these roads, however narrow country lanes link east west and this direction of travel is slightly more challenging. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects given there is scope to protect the character and diversity of the road networks through conservation and enhancement of the local lanes and recognition of the value that the strategic routes provide in connections across the region. | *Scenic:* The powerful River Trent and its tributaries and other water courses within its flood plain provide a strong functional feature running through the landscape, which contribute strongly to scenic factors.<br><br>*Cultural:* The A1500 Roman road near Sturton on Stow is an important historic route and the B1241 is a strategic north-south minor route which links several settlements including Saxilby, Sturton by Stow and Stow. It continues northwards as a minor road, linking a further string of small, nucleated settlements such as Upton, Springthorpe and Corringham.<br><br>*Natural:* The east west travel direction often links the older settlements moving in a more random pattern. These roads gain access to smaller villages and are popular for recreation since they provide attractive destinations as narrow country lanes often with hedgerows on both sides.<br><br>*Recreation and Enjoyment:* This region represents a major east-west link, connecting Lincolnshire with the North of England.<br><br>*Local Distinctiveness and Sense of Place:* This is a predominantly rural and sparsely settled area with small villages and dispersed farms linked by quiet lanes that connect across the landscape to the wider strategic road network linking the cities of Nottingham and Lincoln.<br><br>*Health and Wellbeing:* The local roads (that gain access to smaller villages) are popular for recreation since they provide attractive destinations as narrow country lanes often with high levels of tranquility and isolation.<br><br>*Important Spatial Function:* Main roads are significant features in the landscape with recent development concentrated along these main roads. The bypassing of original village centers has also changed the spatial function of the landscape.<br><br>**Overall**, the value of the Communications and Infrastructure for the Cottam 1 Site/Sites is shaped by the wide range of features which make one landscape type or area different from another. The strategic major road network is defined by important historic routes and in contrast, the east west minor road network links several historic and distinctive smaller string of settlements across the area. Overall, the prevailing road network is formed by narrow lanes that are often tranquil and hedged to both sides with wide grassed verges. | *Character:* This is defined by A1500 Roman road near Sturton on Stow that is an important historic route and the B1241 is a strategic north-south minor route which links several settlements including Saxilby, Sturton by Stow and Stow.<br><br>*Quality:* The east west travel direction between the north-south routes links the older settlements moving in a more random pattern, and which adds interest to the landscape.<br><br>*Value:* The landscape shows evidence of historic settlement with farms, nucleated villages, and small hamlets such as Thorpe le Fallows and Coates, which are features value that are not highly recognised.<br><br>*Capacity:* Main roads are significant features in the landscape with recent development concentrated along these main roads. The bypassing of original village centers has changed the spatial function of the landscape leaving some vulnerability to landscape change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium (Site/Sites) | Medium (Site/Sites) | **Medium** | |

| Landscape Receptor – Communication and Infrastructure (Cottam 1 Site/Sites) | | | | |
|---|---|---|---|---|
| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be screened partially by existing vegetation, in particular along the Willingham Road that passes through the Cottam 1 North Site, and Stow Lane, Thorpe Road and Fleets Lane to the southwest passing through and around the Cottam 1 South Site.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited to few views from these landscape receptors and would not affect their integrity or overall use.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would affect routes to and from the Cottam 1 Site/Site to some degree, but their integrity would not be lost. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels in the context of these routes. There would not be a fundamental change to the surroundings to the landscape setting of these landscape receptors but an increase in traffic locally would put some pressure on these communication links in the short term.<br><br><u>Cottam 1 North:</u><br>T072 Access to Fillingham Grange: Access from Willingham Road (T074) to fields 'B' is from the south via this existing track off the Willingham Road that leads to Fillingham Grange.<br><br>T074 Willingham Road: Access to fields 'A' would be gained off the Willingham Road and run parallel to | <u>Cottam 1 North;</u> The main communication and infrastructure receptor is Willingham Road (T074) that bisects the Site/Sites running in an east/west direction linking between Willingham by Stow and Fillingham.<br><br><u>Cottam 1 South:</u> The main communication and infrastructure receptor is Ingham Road (T107) and Stow Lane (T105) that bisects the Site/Sites running in an east/west direction linking between Stow and Ingham.<br><br>The foreground context of the routes (T072, T074, T098, T099, T105, T107, T110, T119, T120, T121 and T12) would change from the agricultural fields to an area of panels, but they would be set back behind the existing hedgerows.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following changes to the landscape:<br><br>Wildflower meadow mix to be sown beneath proposed panels.<br><br>Mitigation for increased traffic will include the protection and enhancement of existing roadside vegetation where this sits within the Order limits and the increase in general tree cover across the Site/Sites, breaking up views, creating biodiversity gains and capturing carbon.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1.<br><br>Overall, the communications links are able to accommodate the increased level of traffic between the Cottam 1 Site/Sites and to the wider transport links without undue adverse effects on the integrity of these routes. These routes are often used for informal recreation but will not be unduly affected during the operational phase of the development. Although there will be some loss of tranquillity, this will be mitigated by improved vegetative cover locally predominantly screening or softening views of additional traffic.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of the Communication and infrastructure<br>- Grassland improvements along some roads<br>- A more varied landscape along existing routes | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br>The landscape context to the north, south, east, and west of the Cottam 1 Site/Sites will be well-integrated in the close-mid range proximity due to the new hedgerows and shelterbelt planting and the enhancement of existing hedgerows which will be managed to a height of 5m in the middle distance. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining its overall character of the area.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>By Year 15, this vegetation will have matured and been managed to a height of 5m. Hedgerow trees will have matured and shelterbelts and scattered trees will have reached a height of some 7.5m.<br><br>Overall, the communications links are able to accommodate the increased level of traffic between the Cottam 1 Site/Sites and to the wider transport links | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With Mitigation**, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | track that leads to North Farm. Further southwest along Willingham Road, access to the remainder of the fields north of the Willingham Road would be directly from Willingham Road through existing field openings or the use of existing farm tracks.<br><br>T074 Willingham Road: Access from Willingham Road to fields 'B' is from the south via an existing track (T072) off the Willingham Road that leads to Fillingham Grange.<br><br>T098 Unnamed Road, Stow: The Cottam 1 North Site will be accessed via field entrances that lead off the road<br><br>T099 Coates Lane, Stow: Access to fields 'F' from the west off the B1241 (Normanby Road).<br><br>Cottam 1 South:<br><br>T105 Stow Lane: The Cottam 1 South Site will be accessed from Stow Lane via a new route to the west of Blackthorn Hill<br><br>T107 Ingham Road: The Cottam 1 South Site will be accessed from Ingham Road via minor farm tracks and field entrances that lead off Stow Lane at the settlement off Stow Pasture.<br><br>T110 Blackthorn Lane: The Cottam 1 South Site will be accessed via existing field entrances that lead off the lane.<br><br>T119 Fleets Lane: The Cottam 1 South Site will be accessed from Fleets Lane via existing field entrances that lead off the lane.<br><br>T120 Unnamed Road: The Cottam 1 South Site will be accessed via field entrances that lead off the road.<br><br>T121 Unnamed Road: The Cottam 1 South Site will be accessed via field entrances that lead off the road.<br><br>T127 Thorpe Lane: The Cottam 1 South Site will be accessed from Thorpe Lane via field entrances that lead off the lane.<br><br><u>Cable Route Corridor:</u><br><br>The Cable Route Corridor required for Cottam Power Station (CPS) to the Cottam 1 Site/Sites leads in a broad east west direction before heading south to meet with the CPS. The Cable Route Corridor for the Cottam 1 Site/Sites to the Cottam 2 Site will run in a broadly northwest/southeast direction. These two Cable Route Corridors will cross several communication and | - Improved management of existing roadside vegetation<br>- Improved biodiversity along communication links<br>- Improved carbon retention/capture with roadside vegetation enhancement.<br><br>Adverse effects (mitigated):<br>- Panels and structures across the landscape<br>- Increased hard standing and access tracks areas – water runoff management required<br>- Visual intrusion in early years<br>- Increased traffic in the local area with associated visual intrusion<br>- Increased noise, mud and dust levels<br>- Minor loss of tranquillity<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage.<br>Cottam | without undue adverse effects and the integrity and tranquility of these routes. These routes are often used for informal recreation but will not be unduly affected during the operational phase of the development.<br><br>T074 Willingham Road: At the Cottam 1 North Site, Willingham Road will be protected and enhanced through the enhancement of existing hedgerows to thicken and grow out these from their over managed state. Verge enhancements will also be implemented through the seeding of poor-quality verges with seeds/hay from a donor Local Wildlife Site.<br><br>T107: Ingham Road: At the Cottam 1 South Site, views from the Ingham Road will be mitigated by both new and enhanced hedgerows along the northern boundary of the Site, with hedgerow trees irregularly spaced along their length.<br><br>**Overall**, in terms of mitigation for the Cottam 1 South Site, due to the sensitivity of the rural lanes, the hedgerows would be protected to ensure sight lines are not impinged. Heavy vehicles can erode the character of rural roads, and this would be managed effectively with the Scheme all hedgerows and tree cover would be retained. The approach roads to the smaller settlements are a key feature that add to the identity of the local landscape and lines of trees are often characteristic in these locations and these would be protected and retained. Any new tree planting would be confined to hedgerows (i.e., not on verges) particularly on historic enclosure roads, where applicable. | |

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| | infrastructure receptors, and this is detailed within the Cable Route Corridor Receptor Sheets at **Appendix 8.2.11 [C6.3.8.2.11]**.<br><br>Overall, the communications links are able to accommodate the increased level of traffic between the Sites and to the wider transport links without undue adverse effects. The integrity and tranquillity of these routes, often used for informal recreation, will be affected to some degree by increased traffic during the construction phase but this will be short term and field specific at any one time to the Cottam 1 Site/Sites. | | | |
| **5km Study Area:** | | | | |
| **Magnitude** | Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Medium | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Moderate **Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |

| Landscape Receptor – Communication and Infrastructure (Cottam 1 Site) | | |
|---|---|---|
| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 1 Site with the other Cumulative Sites (Cottam 2 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes in the communications and infrastructure due to the scope for additional vegetation enhancing the local landscape character and likewise the setting of the local road network. The existing landscape character associated with the outer edges of these roads and local lanes of the Cumulative Sites and Study Area is predominantly woodland and tree cover around the margins and the change to grassland with scattered trees and a significantly improved hedgerow networks would give rise to overall benefits to landscape character and views along these road networks in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual communications and infrastructure elements or features of the landscape within the Cottam 1 Site/SItes. The landscape is shaped by the wide range of local and strategic road networks, which make one landscape type or area different from another. The strategic major road network is defined by important historic routes and in contrast, the east west minor road network links several historic and distinctive smaller string of settlements across the area. Overall, the prevailing road network is formed by narrow lanes that are often tranquil and hedged to both sides with wide grassed verges.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam Power Station and the Cottam 1 Site/Sites and extending between the Cottam 1 Site/Sites and Cottam 2 Site (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.1 [C6.4.8.15.1.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the Cable Route Corridor, Cottam 2, and Cottam 3a and 3b Sites and the Cable Route Corridors would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these cumulative sites and the Cable Route Corridors.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites and the Cottam 2 Site, located to the:<br>• east of Upton and to the south of Sturgate Airfield<br>• south of Kexby in the locality of Valley Farm<br>• east of Willingham by Stow in the locality of the residential property known as Carisbrooke<br>• east of Stow, just to the east of the property known as Tam Howes; and<br>• west of Sturton by Stow, extending from West Syke Lane as far as Normanby by Stow.<br><br>This is a predominantly rural and sparsely settled area with small villages and dispersed farms linked by quiet lanes that connect across the landscape to the wider strategic road network linking the cities of Nottingham and Lincoln. The quiet lanes are populated by small settlements that bring enclosure, intimacy, and interest to the landscape.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites and the Cottam 2, and Cottam 3a Site, located to the:<br>• northeast of Sturton by Stow, extending between Tillbridge Road and Ingham Road. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Moderate with the Tillbridge Development and adverse, giving rise to likely **Significant** effects at year 1 of operation. The effects would be Minor at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the road and local lane network with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area within the character area<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cotton 1 Site/Sites and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 1, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 1 Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the watercourses. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 1 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.<br><br>The landscape is shaped by the wide range of local and strategic road networks, which make one landscape type or area different from another. The strategic major road network is defined by important historic routes and in contrast, the east west minor road network links several historic and distinctive smaller string of settlements across the area. Overall, the prevailing road network is formed by narrow lanes that are often tranquil and hedged to both sides with wide |

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| | The approach roads to the smaller settlements are a key feature that add to the identity of the local landscape and lines of trees are often characteristic in these locations and add to enclosure across the landscape.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites and the Cottam 2, and Cottam 3b Sites, located to the:<br>• northeast of Sturton by Stow, extending between School Lane Farm and Ingham Road.<br><br>The approach roads to the smaller settlements are a key feature that add to the identity of the local landscape and lines of trees are often characteristic in these locations and add to enclosure across the landscape.<br><br>There are local patches of intervisibility between All Sites comprising the landscape to the:<br>• east boundary of the Cottam 1 North Site/Sites, extending from Glentworth in the north as far as Ingham in the south.<br><br>Main roads are significant features in the landscape with recent development concentrated along these main roads. The bypassing of original village centers has also changed the spatial function of the landscape and its ability to provide enclosure in views across the area.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Communications and Infrastructure*<br>Overall, the character of the landscape and the communications and infrastructure is shaped by evidence of historic settlement with farms, nucleated villages, and small hamlets such as Thorpe le Fallows and Coates, which are features value that are not highly recognised for adding intimacy and interest to the landscape. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape and its communications and infrastructure features. Moreover, these features are often set within a well-vegetated context or associated with built form that plays a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is low and very low for the Cumulative Sites because there are minor patches of small cumulative change to a limited area of medium sensitivity, affecting some characteristics without altering the overall impression of its character. | grassed verges and they have a major role in helping to define the quality of the landscape and reducing the visibility across the area.<br><br>*Overall Landscape Character of the Communications and Infrastructure*<br>Overall, the character of the landscape and the communications and infrastructure is shaped by evidence of historic settlement with farms, nucleated villages, and small hamlets such as Thorpe le Fallows and Coates, which are features value that are not highly recognised for adding intimacy and interest to the landscape. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape and its communications and infrastructure features. Moreover, these features are often set within a well-vegetated context or associated with built form that plays a positive role in reducing the overall cumulative effects. |
| **Magnitude** | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1) **with only** Embedded Mitigation: Very Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Medium<br>Operation (Year 1): Medium<br>Operation (Year 1) **with only** Embedded Mitigation: Medium<br>Operation (Year 15): Low<br>Decommissioning: Low |

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| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15: Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Negligible **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Moderate **Significant**<br>Operation (Year 1): Moderate **Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Moderate **Significant**<br>Operation (Year 15): Minor **Not Significant**<br>Decommissioning: Minor **Not Significant** |

**Landscape Receptor – Communication and Infrastructure (Cottam 2 Site)**

**Receptor Baseline:**

Within the Cottam 2 to Cottam 3a and 3b Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**.

The landscape is characterized by the dynamic broad valley of the River Trent which is bordered by large urban areas including the cities of Nottingham and Lincoln connected by a strategic road network in a mostly north south direction. There are also scattered rural settlements perched on the edge of the floodplain that are linked by a smaller network of minor roads and local lanes which generally follow an east west alignment.

**Key Features:**
The Site/Sites within Cottam 2 (2km Study Area) are broadly defined to the north by the A159 (Laughton Road) which takes an informal alignment across the landscape leading north from Gainsborough and serving the settlements of Wharton, Blyton, Laughton, Scotton and Scotter, and then connecting the larger settlement of Scunthorpe. The mainline railway that connects Gainsborough to Grimsby (via Brigg) also broadly defines the Site/Sites to the north, intertwined with the route of the B1205 (Kirton Road) that connects Gainsborough to Kirton in Lindsey. To the south, the A631 (Corringham Road), follows an informal alignment that is orientated in a broad east direction connecting Gainsborough in the west with Hemswell and Hemswell Cliff in the east. To the east, the landscape is defined by the B1398 (Middle Street) following a distinctive almost straight alignment along the limestone capped scarp slope on a near parallel alignment with Ermine Street. Middle Street connects the settlements of Harpswell, Hemswell, Willhoughton, Blyborough, Grayinghan and Kirton in Lindsey. Finally, to the west, the local road network (Pilham Lane) passes north south in a straight alignment connecting the A631 at Corringham in the south with the small settlement of Pilham in the north. The Site/Sites have residential properties towards the central part, known as The Cottage and Corringham Grange Farm and these are accessed by a narrow unnamed road that passes in a broadly north-northwest to south-southeast direction. Two further access tracks then lead off the main access road to these residential properties, running in a perpendicular alignment that reflects the geometric form of the field parcels. The A631 connects the small settlement of Corringham in the west to Hemswell, which occupies the limestone capped scarp slope to the east. The A631 is a strategic communication route that connects Gainsborough in the west to the A15 in the east.

There are also other small roads forming part of the local road network running in a predominantly east west and north south direction across the landscape that are within the immediate context of the Site/Sites. To the north/northwest, PilhamLane runs in an east west direction and then changes direction at the right-angled bend to meet with Kirton Road. To the south, Mill Mere Road borders the boundary of the Site/Sites and passes east west direction and then changes direction at the right-angled bend to link with the A631 (Corringham Road). To the east, the small settlement of Yawthorpe is served by a local road leading off Templefield Road where several farmseads and residential properties make up this small hamlet including Ancliffe Farm, Home Farm, Park Farm, The Cottage, and Taskers Farm. To the west, Corringham Beck runs in a north south direction connecting East Lane in the south at Corringham with Pilham Lane in the north. Corringham Beck serves several properties known as The Old Hall, Hall Farm and Keeper's Cottage.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change for the Cottam 2 Site (Communications and Infrastructure), recent trends have shown that significant infrastructure development pressures exist from the main settlements and roads that traverse the area. The challenges are to conserve the tranquility of the area through careful planning that 2inimizes road construction, car use and disturbance, and provides sustainable transport options and well-designed green infrastructure.<br><br>**Overall**, the susceptibility of the Communications and Infrastructure for the Cottam 2 Site is conditioned by the sensitivity of the rural roads and minor tracks, lanes and farm roads that are bordered by wide verges. Driving north to south across the area is relatively straightforward as the A156 runs fairly true to the River Trent and the B1241 follows the almost meandering course of the River Till. Most of the developed settlements are near these roads, however narrow country lanes link east west and this direction of travel is slightly more challenging. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects given there is scope to protect the character and diversity of the road networks through conservation and enhancement of the local lanes and recognition of the value that the strategic routes provide in connections across the region. | *Scenic:* This region represents a major east-west link, connecting Lincolnshire with the North of England. The minor road network offers views over a local landscape that is, in parts, rich in natural and built heritage.<br><br>*Cultural:* The close proximity to Gainsborough as a major historic crossing on the River Trent to the west and the strategic location of Roman roads on the limestone capped scarp slope to the east give rise to a number of historic settlements in the intervening landscape.<br><br>*Natural:* The local roads that gain access to smaller villages are valuable wildlife corridors since they are often narrow country lanes with grass verges, hedgerows to both sides and high levels of tranquility.<br><br>*Recreation and Enjoyment:* The east west travel direction often links the older settlements moving in a more random pattern following minor roads. These roads are popular for recreation since they provide attractive destinations as narrow country lanes.<br><br>*Local Distinctiveness and Sense of Place:* The powerful River Trent and its tributaries and other water courses within its flood plain provide a strong functional feature running through the landscape, which contribute strongly to the 'sense of place'.<br><br>*Health and Wellbeing:* The bypassing of original village centers has also changed the function of the landscape. Main roads are significant features in the landscape with recent development concentrated along these main roads. The by-passed villages are often refuges of tranquility bringing benefits for health and wellbeing.<br><br>*Important Spatial Function:* The strategic major road network is defined by important historic routes and the strategic minor road network also links several historic and distinctive smaller string of settlements across the area, these networks play an important role in wayfinding across the area.<br><br>**Overall**, the value of Communications and Infrastructure for the Cottam 2 Site is shaped by the local roads (that gain access to smaller villages) which are popular for informal recreation since they provide attractive destinations as narrow country lanes often with high levels of tranquility and isolation. | *Character:* The close proximity to Gainsborough as a major historic crossing on the River Trent to the west and the strategic location of Roman roads on the limestone capped scarp slope to the east give rise to a number of historic settlements in the intervening landscape.<br><br>*Quality:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Aisby, Corringham and Pilham. The landscape surrounding these settlements retain a deeply rural and tranquil character.<br><br>*Value:* The east west travel direction often links the older settlements moving in a more random pattern following minor roads. These roads are popular for recreation since they provide attractive destinations as narrow country lanes. There are also north south roads within this minor network which adds an extra level of complexity to the landscape.<br><br>*Capacity:* The capacity is shaped by the local roads (that gain access to smaller villages) which are popular for informal recreation, and some are narrow country lanes often with high levels of tranquility and isolation, which have some vulnerability. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium to Low (Site/Sites) | Medium to Low (Site/Sites) | **Medium** | |

| Landscape Receptor – Communication and Infrastructure (Cottam 2 Site) | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be screened by existing and proposed vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited to few views from these landscape receptors and would not affect their integrity or use.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would affect one scheduled monument at Thorpe le Fallows to some degree, but its integrity would not be lost. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. There would not be a fundamental change to the surroundings to the views and settings of the landscape receptors, but an increase in traffic locally would put some pressure on these communication links in the short term.<br><br>T38 Field Farm Lane: To the west of the Cottam 2 Site this straight road runs north/south from Corringham to Aisby before heading north. This road may need to accommodate some additional local traffic travelling between the Sites of Cottam 2 and Cottam 3b.<br><br>T40 Access to Corringham Grange: Cottam 2 will be directly accessed via this access track to Corringham Grange.<br><br>T45 East Lane: Cottam 2: Cottam 2 will be directly accessed from East Lane via access to Corringham | Cottam 2: The main communication and infrastructure receptors are Field Farm Lane (T38), access to Corringham Grange (T40) and East Lane (T45). Otherwise, the Cottam 2 Site has few communication links surrounding the Scheme. The Site is however in close proximity to the strategic route of the A631 which runs east/west linking Gainsborough to the A15.<br><br>The foreground context of the routes (T038, T040 and T45) would change from the agricultural fields to an area of panels, but they would be set back behind the existing hedgerows.<br><br>The minor roads around the Site (running predominantly north/south and east/west) may also need to accommodate a minor amount of additional traffic during the operation phase of the Scheme. Where these roads are within, or abut the Cottam 2 Site, boundary vegetation will be enhanced, and the wide road margins retained.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following changes to the landscape:<br><br>Mitigation for increased traffic will include the protection and enhancement of existing roadside vegetation where this sits within the Order limits and the increase in general tree cover across the Site, breaking up views, creating biodiversity gains and capturing carbon.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1.<br><br>Overall, the communications links are able to accommodate the increased level of traffic between the Sites and to the wider transport links without undue adverse effects. The integrity of these routes, often used for informal recreation, will not be unduly affected during the operational phase of the development. Although there will be some loss of tranquillity, this will be mitigated by improved vegetative cover locally predominantly screening or softening views of additional traffic.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of the Communication and infrastructure<br>- Grassland improvements along some roads<br>- A more varied landscape along existing routes | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east, and west of the Cottam 2 Site will be screened in the close-mid range proximity through the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining its overall character of the area.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>By Year 15, this vegetation will have matured and been managed to a height of 5m. Hedgerow trees will have matured and shelterbelts and scattered trees will have reached a height of some 7.5m.<br><br>Traffic will follow the short stretch of East Lane before heading south to the main road. This road is straight with wide verges and low hedges providing good visibility along its route. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | Grange. There will also be construction activities directly adjacent to the lane.<br><br>The minor roads around the Site (running predominantly north/south and east/west) may also need to accommodate a relatively limited level of additional traffic to bring forward the construction phase of the development.<br><br>The Cable Route Corridor<br>Required for the Cottam 1 Site/Sites to Cottam 2 Site and Cottam 2 Site to Cottam 3a and 3b Sites will run in a broadly northwest/southeast direction. These two Cable Route Corridors will cross several communication and infrastructure receptors, and this is detailed within the Cable Route Corridor Receptor Sheets at **Appendix 8.2.11 [C6.3.8.2.11]**.<br><br>Overall, the communications links are able to accommodate the increased level of traffic between the Sites and to the wider transport links without undue adverse effects. The integrity and tranquility of these routes, often used for informal recreation, will be affected to some degree by increased traffic during the construction phase but this will be short term and field/site specific at any one time. | - Improved management of existing roadside vegetation<br>- Improved biodiversity along communication links<br>- Improved carbon retention/capture with roadside vegetation enhancement.<br><br>Adverse effects (mitigated):<br>- Panels and structures across the landscape<br>- Increased hard standing and access tracks areas – water runoff management required<br>- Visual intrusion in early years<br>- Increased traffic in the local area with associated visual intrusion<br>- Increased noise, mud and dust levels<br>- Minor loss of tranquillity<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | Overall, the communications links are able to accommodate the increased level of traffic between the Sites and to the wider transport links without undue adverse effects. The integrity and tranquility of these routes, often used for informal recreation, will not be unduly affected during the operational phase of the development.<br>**Overall**, in terms of mitigation for the Cottam 2 Site, due to the sensitivity of the rural lanes, the hedgerows would be protected to ensure sight lines are not impinged. Heavy vehicles can erode the character of rural roads, and this would be managed effectively with the Scheme all hedgerows and tree cover would be retained. The approach roads to the smaller settlements are a key feature that add to the identity of the local landscape and lines of trees are often characteristic in these locations and these would be protected where applicable and retained. Any new tree planting would be confined to hedgerows (i.e., not on verges) particularly on historic enclosure roads, where applicable. | |
| **5km Study Area:** | | | | |
| **Magnitude** | Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Medium | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Moderate **Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |

| Landscape Receptor – Communication and Infrastructure (Cottam 2 Site) | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 2 Site with the other Cumulative Sites (Cottam 1 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes in the communications and infrastructure due to the scope for additional vegetation enhancing the local landscape character and likewise the setting of the local settlements, smallholdings and isolated dwellings. The existing landscape character associated with the outer edges of the settlements of the Cumulative Sites and Study Area is predominantly woodland and tree cover around the margins and the change to grassland with scattered trees and a significantly improved hedgerow networks would give rise to overall benefits to landscape character and views towards these settlements in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual communication and infrastructure or features of the landscape within Cottam 2. The wider landscape is typified by the local roads that gain access to smaller villages are valuable wildlife corridors since they are often narrow country lanes with grass verges, hedgerows to both sides and high levels of tranquility.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 Site and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.2 [C6.4.8.15.1.2]** which shows that with the Cottam 2 Site, cumulative visibility with the Cottam 1 Site/Sites and the Cottam 3a and 3b Sites would not be experienced across the entirety of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of intervisibility between the Cottam 2 Site and the Cottam 3a and Cottam 3b Sites extending from the:<br>• South boundary of the Cottam 2 Site, starting at the eastern edge of Corringham and reaching as far as Yawthorpe Beck and Yawthorpe<br>• West boundary of the Cottam 2 Site, extending as far as Pilham Lane<br>• East boundary of the Cottam 2 Site, extending as far Yawthorpe and Yawthorpe Fox Covert<br>• Northwest boundary of the Cottam 2 Site, extending as far as the Cottam 3a and 3b Sites.<br><br>The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Aisby, Corringham and Pilham with good levels of tree cover that help provide enclosure.<br><br>There is a local patch of intervisibility between the Cottam 2 Site and the Cottam 3b Site, comprising the:<br>• Northern-most tip of the Cottam 2 Site extending across the medieval village of Dunstall as far as the medieval village of Southorpe; and<br>• Southeast of the River Eau, extending as far as Huckerby Farm and Huckerby Bungalows.<br><br>There are also other small roads forming part of the local road network running in a predominantly east west and north south direction across the landscape that are within the immediate context of the Site/Sites. To the north/northwest, Pilham Lane runs in an east west direction and then changes direction at the right-angled bend to meet with Kirton Road. The changes of direction in the road network provide more intimacy and interest in views across the area and add intimacy at the junctions. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Moderate with the Tillbridge Development and adverse, giving rise to likely **Significant** effects at year 1 of operation. The effects would be Minor at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the roads and local lanes with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual communication and infrastructure or features of the landscape within the Cottam 2 Site. The wider landscape is typified by the local roads that gain access to smaller villages are valuable wildlife corridors since they are often narrow country lanes with grass verges, hedgerows to both sides and high levels of tranquility.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.2 [C6.4.8.15.2.2]** which shows that with the Cottam 2 Site, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 2 Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 2, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 2 Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the watercourses. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 2 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.<br><br>The landscape is shaped by the wide range of local and strategic road networks, which make one landscape type or area different from another. The strategic major road network is defined by important historic routes and in contrast, the east west minor road network links several historic and distinctive smaller string of settlements across the area. Overall, the prevailing road network is formed by narrow lanes that are often tranquil and hedged to both sides with wide grassed |

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| | There are local patches of intervisibility between All Sites comprising the:<br>• North of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe<br>• West of the settlement of Corringham, extending from Staplegate House as far Windy Ridge on Pilham Lane<br>• West of Springthorpe, extending across the landscape as far as Harpswell Low Farm; and<br>• East of Yawthorpe, extending as far as Hemswell.<br><br>The close proximity to Gainsborough as a major historic crossing on the River Trent to the west and the strategic location of Roman roads on the limestone capped scarp slope to the east give rise to a number of historic settlements in the intervening landscape, which add a 'time depth' and features of intimacy within the landscape.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual ProW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape and Communications and Infrastructure*<br>Overall, the character of the landscape and the land use is shaped by the strategic major road network that is defined by important historic routes and the strategic minor road network also links several historic and distinctive smaller string of settlements across the area, these networks play an important role in wayfinding across the area. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its communications and infrastructure features. Moreover, these features are often set within a well-vegetated context or associated with built form that plays a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is low and very low for the Cumulative Sites because there are minor patches of small cumulative change to a limited area of medium sensitivity, affecting some characteristics without altering the overall impression of its character. | verges and they have a major role in helping to define the quality of the landscape and reducing the visibility across the area.<br><br>*Overall Character of the Landscape and Communications and Infrastructure*<br>Overall, the character of the landscape and the land use is shaped by the strategic major road network that is defined by important historic routes and the strategic minor road network also links several historic and distinctive smaller string of settlements across the area, these networks play an important role in wayfinding across the area. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its communications and infrastructure features. Moreover, these features are often set within a well-vegetated context or associated with built form that plays a positive role in reducing the overall cumulative effects. |
| **Magnitude** | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1) **with only** Embedded Mitigation: Very Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Medium<br>Operation (Year 1): Medium<br>Operation (Year 1) **with only** Embedded Mitigation: Medium<br>Operation (Year 15): Low<br>Decommissioning: Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant** | Construction: Moderate **Significant**<br>Operation (Year 1): Moderate **Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Moderate **Significant** |

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| | Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Operation (Year 15: Minor **Not Significant**<br>Decommissioning: Minor **Not Significant** |

| Landscape Receptor – Communication and Infrastructure (Cottam 3a and 3b Sites) |
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**Receptor Baseline:**

Within the Cottam 3a and 3b Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales is located within the 2km Study Area, but only extending across its eastern most part, then sharing the western most part with RLCT Profile 4b: Wooded Vales. The landscape character type then occupies an eastern part of the 5km Study Area where it shares a boundary with Kirton in Lindsey. The western part of the 5km Study Area then comprises of a mixture of RLCT 2b: Planned and Drained Fens and Carrlands, RLCT 4a: Unwooded Vales and RLCT 4b: Wooded Vales, The Unwooded Vales is generally characterised by mixed agriculture set within an enclosed landscape of low, well-maintained hedgerows.

The Site/Sites within Cottam 3 (2km Study Area) can be sub-divided into two distinct land areas.

- Cottam 3a
- Cottam 3b

**Key Features:**

The Sites within Cottam 3a and 3b (2km Study Area) are broadly defined to the north by the A159 (Laughton Road) which takes an informal alignment across the landscape leading north from Gainsborough and serving the settlements of Wharton, Blyton, Laughton, Scotton and Scotter, and then connecting the larger settlement of Scunthorpe. To the south, the A631 (Corringham Road), follows a fairly informal alignment that is orientated in a broad east direction connecting Gainsborough in the west with Hemswell and Hemswell Cliff in the east. To the east, the landscape is defined by the B1398 (Middle Street) following a distinctive almost straight alignment along the limestone capped scarp slope on a near parallel alignment with Ermine Street. Middle Street connects the settlements of Harpswell, Hemswell, Willhoughton, Blyborough, Grayinghan and Kirton in Lindsey. Finally, to the west, the local road network (Station Road and Pilham Lane) passes north south in a straight alignment connecting the small settlement of Pilham in the south with the larger settlement of Blyton in the north at the junction with Kirton Road in the north.

Cottam 3a:
This is an area of land that is broadly defined to the north by a very limited network of roads that only comprise the A159, which connects to the larger settlement of Scotter. There is a further local lane that passes in a broad east west direction connecting Laughton Woods in the west with Scotton (High Street) in the east. This local lane provides access to Scotton Common Nature Reserve and Dallison Plantation and is a busy road which provides a direct link to Scotton from the A159. To the south, Kirton Road runs in an east west straight alignment and forms most of the southern boundary of the Site/Sites. This road runs in a predominantly east to west direction across the agricultural landscape turning to a broadly north to south alignment for a short section to the east before returning to the main east to west alignment. This road connects the settlements of Blyton in the west with Grayingham in the east. Kirton road serves several farmsteads and isolated dwellings including The Fields Farm, Grange Farm, Blenheim Farm and Grange Farm. To the east, Kirton Road takes a north south direction at the right-angled turn in the road at the junction with Pilham Road. To the west, the Site/Sites are defined by the A159, Laughton Road which passes north and skirts the eastern edge of Laughton Wood. To the central part of the Site/Sites, there are several tracks associated with the former airfield use and current use as the Blyton Park Driving Centre. There is also a collection of tracks that serve Blyton Grange and Blue Bell Farm at the northeast corner of the Site/Sites. The surrounding landscape is also punctuated by small roads linking villages, with the B1205 The A159 is located to the west of the site running through Blyton and then northward before turning northeast towards the village of Scotter. In the east, the road network is scarce, but where present they are relatively more formal and often change to a linear north to south alignment to follow the limestone capped scarp slope, such as Grayingham Low Road that ultimately connects to Kirton in Lindsey. Further to the east, the B1398 (Middle Street) and the A15 (Ermine Street) also follow the same north south alignment and are former Roman roads. Towards the west, the road network is more formal with a greater concentration of east west and north south connections. Towards Gainsborough the road network diminishes where large areas of parkland and woodland are found within the Laughton Area of Greater Landscape Value (AGLV).

Cottam 3b:
This is an area of land that is mostly bordered to the north by the mainline railway that passes between Gainsborough and Grimsby via Kirton in Lindsey and Brigg. The railway line takes a serpentine route through Gainsborough and then cuts across the landscape in a straight alignment (south-southwest to north-northeast) before taking a southwest to northeast alignment towards the edge of Kirton in Lindsey. Beyond the railway line, there is a secondary road (Kirton Road) that passes in a broad east west direction, and which connects Blyton in the west with Kirton in Lindsey in the east. This road provides access to several farmsteads including Grange Farm, The Fields Farm and Top Farm and is a busy road which provides a direct link to Blyton from the A15. To the south, Green Lane is part of the local road network and runs in an east west direction between Pilham in the west and Pilham Lane in the east. This road takes an indirect alignment with several right-angled bends and serves a single property called Home Farm. To the east, the Site/Sites are bordered by Pilham Lane, which takes a north south direction connecting Kirton Road in the north then taking a right-angled turn to connect with Pilham Lane to the south of Aisby and Gilby. To the west, the Site/Sites are defined by Pilham Lane, and which connects the settlements of Blyton, Pilham, Gilby and Corringham. To the central part of the Site/Sites, there is only one track which runs in an east west direction and is also a public right of way (PRoW). The track serves Glebe Farm and runs through to Pilhaml Lane as a narrow green lane with bordering hedgerows to each side.

The surrounding landscape is also host to other major road networks including the A159 (Thonock Road) that passes through Blyton before taking a northeast direction towards the small settlement of Scotter. In the east, the road network is scarce, but where present they often take an east west alignment connecting to the villages such as Hemswell, Willhoughton, Blyborough and Grayingham that line the limestone capped scarp slope. Further to the east, the B1398 (Middle Street) and the A15 (Ermine Street) that follow a north south alignment and are former Roman roads. Towards the west, the road network is scarce with arterial roads mainly leading towards Gainsborough where large areas of parkland and woodland are found within the Laughton Area of Greater Landscape Value (AGLV.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
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| In terms of forces for change for the Cottam 3a and 3b Site (Communications and Infrastructure), recent trends have shown that there are challenges in conserving the tranquility of the area. Road construction, car use and disturbance have made an impact. Sustainable transport options and well-designed green infrastructure are likely to take some pressures away from the main settlements and roads that traverse the area. The distinctive long straight Roman roads form the basis of current road networks and are at risk of losing their character.<br><br>**Overall**, the susceptibility of the Communications and Infrastructure for the Cottam 3 and 3b Sites is conditioned by the relative lack of road connectivity east to west. Driving north to south across the area is generally straightforward as the A156 runs true to the River Trent and the A15 and B1398 follow the limestone capped scarp slope to the east. Most of the developed settlements are near these roads, however narrow country lanes link east west and this direction of travel is slightly more challenging. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects given there is scope to protect the character and diversity of the road networks through the conservation and enhancement of the rural roads. These minor tracks, lanes and farm roads are often bordered by tall hedgerows and wide verges and evidence of Roman influence through Medieval settlement is also present through abandoned villages. | *Scenic:* It is an area that shows a distinct contrast between busy north south routes and the more tranquil, less accessible east west routes that are intrinsically linked and offer many locations to capture views across the landscape.<br><br>*Cultural:* The landscape has always been a powerhouse for the country in terms of connectivity and the strong relationship with the River Trent continues to provide a dynamic landscape with a rich network of history.<br><br>*Natural:* The landscape shows significant potential to develop into a more sustainable landscape. Whilst not offering a significant variety of habitats, there is scope to build upon existing areas that hold significant wildlife value and explore potential to create new habitats.<br><br>*Recreation and Enjoyment:* Senses of inspiration and escapism are likely to be associated with the long views afforded from the Cliff along the western edge, as well as the long-distance views to Lincoln Cathedral.<br><br>*Local Distinctiveness and Sense of Place:* The Power Stations are a symbol of the River Trent and its place in powering the country. These features hold a positive value when defining the 'sense of place'.<br><br>*Health and Wellbeing:* The sense of enjoyment that helps promote health and wellbeing stems from the local lanes, small villages, arable fields, and the peacefulness of the landscape.<br><br>*Important Spatial Function:* The spatial function is provided by the large-scale limestone plateau landscape with its west facing scarp known as the Cliff.<br><br>**Overall**, the value of the Communications and Infrastructure for the Cottam 3a and 3b Sites is shaped by the growth and development of nearby settlements that is changing the road networks. These changes present considerable challenges around highway management interventions and an increase in traffic using the east west routes across the area. | *Character:* The roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Blyton Beck, provide local points of interest and the opportunity to capture views across the landscape.<br><br>*Quality:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as the Medieval village of Southorpe. The landscape surrounding these settlements retain some rural and tranquil character with farms, but minor lanes and roads are interrupted by the presence the former airfield in parts.<br><br>*Value:* The sense of enjoyment that helps promote health and wellbeing stems from the local lanes, small villages, arable fields, and the peacefulness of the landscape.<br><br>*Capacity:* The landscape benefits from good levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. An increase in traffic using the east west routes across the area adds some vulnerability of the landscape to change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium to Low (Site/Sites) | Medium to Low (Site/Sites) | **Medium** | |

| Landscape Receptor – Communication and Infrastructure (Cottam 3a and 3b Sites) | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be screened partially by existing vegetation, in particular along the Laughton Road and the Kirton Road/Pilham Lane around the Cottam 3a Site and the Pilham Lane and to a lesser degree the Green Lane adjacent to the Cottam 3b Site.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited to few views from these landscape receptors and would not affect their integrity or overall use.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would affect routes to and from the Site(s) to some degree, but their integrity would not be lost. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. There would not be a fundamental change to the surroundings to the views and settings of these landscape receptors but an increase in traffic locally would put some pressure on these communication links in the short term.<br><br><u>Cottam 3a:</u><br><br>T016: Kirton Road to C228: The Cottam 3a Site will not be directly accessed from this section of the route, but there would be construction activities within the context of the highway for a short section of the route. | <u>Cottam 3a:</u> The main communication and infrastructure receptors are Kirton Road to C228 (T016) and Kirton Road (T019).<br><br><u>Cottam 3b:</u> The main communication and infrastructure receptors are Bonsdale Lane, Blyton (T021), Station Road (T023), Green Lane (T028) and the mainline railway (T163).<br><br>The foreground context of the routes (T016, T019, T021 and T028) would change from the agricultural fields to an area of panels, but they would be set back behind the existing hedgerows.<br><br>The minor roads around the Site (running predominantly north/south and east/west) may also need to accommodate a minor amount of additional traffic during the operation phase of the Scheme. Where these roads are within, or abut the Cottam 3a and 3b Site, boundary vegetation will be enhanced, and the wide road margins retained.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following changes to the landscape:<br><br>Enhanced existing vegetation adjacent to these routes and further north where the eastern boundary of the 3b Site abuts Bonsdale Lane, new planting will mitigate views and help to buffer any additional traffic along these routes. Their overall tranquility, although reduced would, in the main be retained, with the wide verges allowing the continuation of informal recreation along these routes.<br><br>Further north at Cottam 3a Site, the access routes are off the B1205 Kirton Road. The northern boundary of this road is to be enhanced with outgrown hedgerows and hedgerow trees where currently this route is very open and exposed being part of the former airfield.<br><br>Mitigation for increased traffic will include the protection and enhancement of existing roadside vegetation where this sits within the Order limits and the increase in general tree cover across the Site, breaking up views, creating biodiversity gains and capturing carbon.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1. | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>**With** secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east, and west of the Site will be screened in the close-mid range through the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m in the middle distance. These new and augmented hedgerows will provide a series of good quality hedgerows both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining its overall character of the area.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>By Year 15, this vegetation will have matured and been managed to a height of 5m. Hedgerow trees will have matured and shelterbelts and scattered trees will have reached a height of some 7.5m.<br><br>T023 Station Road: Access to the Cottam 3b Site is off Pilham Lane/Station Road to the west of the Site along a track heading east. This track is also a local PRoW and access to Glebe Farm. Enhancement of this route | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | T019 Kirton Road: The Cottam 3a Site will be directly accessed off Kirton Road via existing field entrances and tracks.<br><br>Cottam 3b:<br><br>T021 Bonsdale Lane, Blyton: The Cottam 3b Site will be accessed directly off this lane via existing field entrances and tracks.<br><br>T023 Station Road: Will provide access to the Cottam 3b Site via the PRoW (Pilh/20/1).<br><br>T028 Green Lane: The Cottam 3b Site will be accessed directly off this lane via the existing field entrance/track.<br><br>T163 The mainline railway: Construction traffic may need to cross at Blyton Level Crossing.<br><br>The minor roads around the Site (running predominantly north/south and east/west) may also need to accommodate a relatively limited level of additional traffic to bring forward the construction phase of the development.<br><br>The Cable Route Corridor required for the Cottam 2 Site to Cottam 3a and 3b Sites will run in a broadly northwest/southeast direction. This Cable Route Corridor will cross several communication and infrastructure receptors, and this is detailed within the Cable Route Corridor Receptor Sheets at **Appendix 8.2.11 [C6.3.8.2.11]**.<br><br>Overall, the communications links are able to accommodate the increased level of traffic between the Sites and to the wider transport links without undue adverse effects. The integrity and tranquillity of these routes, often used for informal recreation, will be affected to some degree by increased traffic during the construction phase but this will be short term and field/site specific at any one time. The Laughton Road provides a good link north/south being a major route through the area. | Overall, the communications links are able to accommodate the increased level of traffic between the Sites and to the wider transport links without undue adverse effects and the integrity and tranquillity of these routes, often used for informal recreation, will not be unduly affected during the operational phase of the development.<br>Although there will be some loss of tranquillity, this will be mitigated by improved vegetative cover locally predominantly screening or softening views of additional traffic.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of the Communication and infrastructure<br>- Grassland improvements along some roads<br>- A more varied landscape along existing routes<br>- Improved management of existing roadside vegetation<br>- Improved biodiversity along communication links<br>- Improved carbon retention/capture with roadside vegetation enhancement.<br><br>Adverse effects (mitigated):<br>- Panels and structures across the landscape<br>- Increased hard standing and access tracks areas – water runoff management required<br>- Visual intrusion in early years<br>- Increased traffic in the local area with associated visual intrusion<br>- Increased noise, mud and dust levels<br>- Minor loss of tranquillity<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | is proposed to its eastern section with exiting vegetation along its western section creating a suitable boundary on both sides of the track.<br><br>T019 Kirton Road: Access to the Cottam 3a Site from the south would be off the Kirton Road south directly south of the Site and accessed off the B1205 including through the racetrack entrance.<br><br>Overall, the communications links are able to accommodate the increased level of traffic between the Sites and to the wider transport links without undue adverse effects and the integrity and tranquillity of these routes, often used for informal recreation, will not be unduly affected during the operational phase of the development.<br><br>**Overall**, in terms of mitigation for the Cottam 3a and 3b Sites, due to the sensitivity of the rural lanes, the hedgerows would be protected to ensure sight lines are not impinged. Heavy vehicles can erode the character of rural roads, and this would be managed effectively with the Scheme all hedgerows and tree cover would be retained. The approach roads to the smaller settlements are a key feature that add to the identity of the local landscape and lines of trees are often characteristic in these locations and these would be protected where applicable and retained. Any new tree planting would be confined to hedgerows (i.e., not on verges) particularly on historic enclosure roads, where applicable. | |
| **5km Study Area:** | | | | |
| **Magnitude** | Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Medium | Low | Low | Very Low |

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| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Moderate **Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Communication and Infrastructure (Cottam 3a and 3b Sites)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 3a and 3b Sites with the other Cumulative Sites (Cottam 1 and 2) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes in the communications and infrastructure due to the scope for additional vegetation enhancing the local landscape character and likewise the setting of the local settlements, smallholdings and isolated dwellings. The existing landscape character associated with the outer edges of the settlements of the Cumulative Sites and Study Area is predominantly woodland and tree cover around the margins and the change to grassland with scattered trees and a significantly improved hedgerow networks would give rise to overall benefits to landscape character and views towards these settlements in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual land use elements or features of the landscape within the Cottam 3a and 3b Sites. The wider landscape is typified by the growth and development of nearby settlements that is changing the road networks. These changes present considerable challenges around highway management interventions and an increase in traffic using the east west routes across the area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure 8.15.1.3 [C6.4.8.15.1.3] which shows that with the Cottam 3b Site, cumulative visibility with the Cottam 1 Site/Sites and the Cottam 2 and Cottam 3b Sites would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of intervisibility between the Cottam 3a and 3b Sites, extending from the:<br>• Northeast boundary of the Cottam 3a Site, defined to the west by the Green Respect Burial Park and Park House Farm, and reaching as far as Northorpe in the east<br>• East boundary of the Cottam 3a Site, and stopping short of Cold Harbour Farm; and<br>• North boundary of the Cottam 3b Site, extending for a short distance as far as Grange Farm and Top Farm.<br><br>It is an area that shows a distinct contrast between busy north south routes and the more tranquil, less accessible east west routes that are intrinsically linked and offer many locations to capture views across the landscape. Kirton Road is an exception being a busy east west route with little intimacy or 'sense of place'.<br><br>There are local patches of intervisibility between the Cottam 3a, 3b and Cottam 2 Sites, extending from the: | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Moderate with the Tillbridge Development and adverse, giving rise to likely **Significant** effects at year 1 of operation. The effects would be Minor at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the local lanes and road network with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual land use elements or features of the landscape within the Cottam 3a and 3b Sites. The wider landscape is typified by the growth and development of nearby settlements that is changing the road networks. These changes present considerable challenges around highway management interventions and an increase in traffic using the east west routes across the area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a and 3b Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 3a Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 2, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 2 Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the watercourses. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 2 Site where the intervening settlements of Stow, |

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| | • South boundary of the Cottam 3b Site, bordered by Pilham to the west and the medieval settlement of Dunstall to the east, and reaching as far as Springthorpe in the south<br>• South boundary of the Cottam 3a Site, bordered by the eastern edge of Blyton to the west, reaching Grange Farm and stopping short of the mainline railway; and<br>• North boundary of the Cottam 3a Site, following the alignment of the A159 (Laughton Road) and stopping short to the west of the Green Respect Burial Park.<br><br>The sense of enjoyment that helps promote health and wellbeing stems from the local lanes, small villages, arable fields, and the peacefulness of the landscape away from Gainsborough.<br><br>There is a local patch of intervisibility between All Sites, located to the:<br>• East of the Cottam 3b Site and north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe.<br><br>This is close to an area of land that is mostly bordered to the north by the mainline railway that passes between Gainsborough and Grimsby via Kirton in Lindsey and Brigg. The railway line takes a serpentine route through Gainsborough and then cuts across the landscape in a straight alignment (south-southwest to north-northeast) before taking a southwest to northeast alignment towards the edge of Kirton in Lindsey. Beyond the railway line, there is a secondary road (Kirton Road) that passes in a broad east west direction, and which connects Blyton in the west with Kirton in Lindsey in the east. These networks provide a visual and physical barrier across the landscape that severs the cumulative potential of the Site/Sites.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>Appendix 8.3.2.2 Individual Viewpoint Receptor Sheets [C6.3.8.3.2.2]<br>Appendix 8.3.2.3 Individual Viewpoint Receptor Sheets [C6.3.8.3.2.3]<br>Appendix 8.3.2.4 Individual Viewpoint Receptor Sheets [C6.3.8.3.2.4]<br><br>Appendix 8.3.3.2 Individual Residential Receptor Sheets [C6.3.8.3.3.2]<br>Appendix 8.3.3.3 Individual Residential Receptor Sheets [C6.3.8.3.3.3]<br><br>Appendix 8.3.4.2 Individual Transport Receptor Sheets [C6.3.8.3.4.2]<br>Appendix 8.3.4.3 Individual Transport Receptor Sheets [C6.3.8.3.4.3]<br><br>Appendix 8.3.5.2 Individual PRoW Receptor Sheets [C6.3.8.3.5.2]<br>Appendix 8.3.5.3 Individual PRoW Receptor Sheets [C6.3.8.3.4.3]<br><br>*Overall Character of the Landscape and Communications and Infrastructure*<br>Overall, the character of the landscape and the communications and Infrastructure is shaped by the landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as the Medieval village of Southorpe. The landscape surrounding these settlements retain some rural and tranquil character with farms, but minor lanes and roads are interrupted by the presence the former airfield in parts. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3a and 3b Sites would not alter the character of the landscape and its communications and infrastructure features. Moreover, these features are often set within a well-vegetated context or associated with built form that plays a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is low and very low for the Cumulative Sites because there are minor patches of small cumulative change to a limited area of medium sensitivity, affecting some characteristics without altering the overall impression of its character. | Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.<br><br>The landscape is shaped by the wide range of local and strategic road networks, which make one landscape type or area different from another. The strategic major road network is defined by important historic routes and in contrast, the east west minor road network links several historic and distinctive smaller string of settlements across the area. Overall, the prevailing road network is formed by narrow lanes that are often tranquil and hedged to both sides with wide grassed verges and they have a major role in helping to define the quality of the landscape and reducing the visibility across the area.<br><br>*Overall Character of the Landscape and Communications and Infrastructure*<br>Overall, the character of the landscape and the communications and Infrastructure is shaped by the landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as the Medieval village of Southorpe. The landscape surrounding these settlements retain some rural and tranquil character with farms, but minor lanes and roads are interrupted by the presence the former airfield in parts. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3a and 3b Sites would not alter the character of the landscape and its communications and infrastructure features. Moreover, these features are often set within a well-vegetated context or associated with built form that plays a positive role in reducing the overall cumulative effects. |

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| **Magnitude** | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1) **with only** Embedded Mitigation: Very Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Medium<br>Operation (Year 1): Medium<br>Operation (Year 1) **with only** Embedded Mitigation: Medium<br>Operation (Year 15): Low<br>Decommissioning: Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Negligible **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Moderate **Significant**<br>Operation (Year 1): Moderate **Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Moderate **Significant**<br>Operation (Year 15): Minor **Not Significant**<br>Decommissioning: Minor **Not Significant** |

**Landscape Receptor – Settlements, Industry, Commerce, and Leisure (Cottam 1 Site/Sites)**

**Receptor Baseline:**
Within the Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends across the majority of the 2km and 5km Study Area apart from the eastern most edge where it shares a boundary with RLCT Profile: 6a Limestone Scarps and Dipslopes. The western extent of the 5km Study Area is also host to a small part of RLCT Profile 3a: Floodplain Valleys and RLCT Profile: 4b Wooded Vales.

The Site/Sites within Cottam 1 (2km Study Area) can be sub-divided into two distinct land areas:

- Cottam 1 North
- Cottam 1 South

**Key Features:**
The Settlements, Industry, Commerce and Leisure network is broadly defined to the north-west by the large settlement of Gainsborough (approximately 8.7km) which is Britain's most inland port and one of the main cities within the area along with Newark-on-Trent, Nottingham, Lincoln, and Grantham. The smaller settlements then to the north are typically villages of Medieval origin such the small hamlets of Coates, Gilby, Dunstall and Southorpe. To the southeast, the city of Lincoln is a prominent landmark with the Cathedral that captures the skyline in views across the area. Other settlements to the south include the main town of Saxilby at approximately 19km and Bransby (approximately 1.9km). Otherwise, larger settlements are sparse to the south of the area. To the east, the landscape is defined by compact villages and dispersed farmsteads with the A15 (Ermine Street), which is also a Roman road, following a distinctive straight alignment along the limestone capped scarp slope. Ermine Street connects the city of Lincoln from the south as far as the Humber Estuary in the north. The B1398 (Middle Street) also passes along the scarp slope following an almost parallel alignment with Ermine Street and this historic route supports a string of smaller settlements including Scampton, Aisthorpe, Brattleby, Cammeringham (approximately 1.5km), Ingham (approximately 1.6km), Fillingham (approximately 1km) and Glentworth. Finally, to the west, there are immense coal-fired power stations that exert a visual influence over a wide area, particularly the plumes that rise from them and the pylons and power lines that are linked to them. To the west, the A156 (Gainsborough Road) is almost true to the River Trent and passes through the settlements of Marton, Gate Burton, Knaith before reaching the large settlement of Gainsborough. Other settlements to the west include Stow (approximately 840m), Normanby by Stow (adjacent) and Willingham by Stow (approximately 960m). With the exception of the villages/hamlets mentioned above, the area is relatively sparsely populated with isolated residential properties and farmsteads dotted throughout the surrounding countryside. The Site/Sites lie within the parishes of Fillingham, Cammeringham, Thornton in the Fallows, Sturton by Stow, Stow, and Willingham.

<u>Cottam 1 North:</u>
This is an area of land that is broadly defined to the north by settlements associated with Glentworth Road and Kexby Road. This local road network connects the smaller settlements of Kexby (approximately 1.6km in the west) with Glentworth in the east. Along this route several isolated farmsteads stand back from the road and are associated with small woodlands and lines of trees including Primrose Farm, Glebe Farm, Low Field Farm, Westlands Farm and Spitals Farm. Other residential properties stand closer to the road and include Low Farm Cottages, Low Farm and Glentworth Grange. To the south of the Site/Sites, Ingham Road runs in an east west direction with a clearly defined straight alignment. This local road network connects the settlements of Stow in the west with Ingham and Ingham Cliff in the east. Ingham road serves several farmsteads and isolated dwellings including Furze Hill, Blackthorn Hill, and The Pastures. Other settlements to the south include Sturton by Stow, Thorpe le Fallows (approximately 100m) and Brattleby. To the east, the B1398 (Middle Street) forms an almost continuous and well-defined edge to the Site/Sites and is a strong feature within the landscape where the landform rises distinctly to form the limestone capped scarp slope. Along this edge there is a string of smaller settlements including Ingham, Fillingham, Glentworth and Harpswell. To the west, the Site/Sites are defined by the B1241, of which the alignment is almost true meandering course of the River Till. Along this route, settlements include Sturton by Stow (approximately 1.15km, Stow, Normanby by Stow, Willingham by Stow, Kexby, Upton and Heapham. To the central part of the Site/Sites, the small settlement of Coates is served via a minor road network that also provides access to several farmsteads and isolated dwellings including Grange Farm, Hall Farm Presswood Cottages and Coates Hall. Within this central part, Fillingham Lane also leads into Willingham Road and this route passes east to west across the area linking the settlements of Willingham by Stow in the west to Fillingham in the east. This local road network serves several farmsteads and isolated dwellings including Carisbrooke, Slate House Farm, Magin Moor Farm, Poplar Farm, Turpin Farm, Side Farm, Greystones Farm and Glebe Farm. Long westward views to the power stations can be experienced from some areas of higher ground between Fillingham and Glentworth. Eastward views from the local lanes can be experienced towards the scarp face of the Lincoln 'Cliff' especially where there is a sharp right-angled bends on the local roads such as between Kexby and Fillingham.

<u>Cottam 1 South:</u>
This is an area of land that is broadly defined to the north by Ingham Road, which runs in an east west direction with a clearly defined straight alignment. This local road network connects the settlements of Stow in the west with Ingham and Ingham Cliff in the east. Ingham road serves several farmsteads and isolated dwellings that are set close to the road including Furze Hill and The Pastures with Blackthorn Hill set back almost 300m from the road with associated woodland cover and lines of trees. To the south, the boundary of the Site/Sites is defined by Thorpe Lane, that connects the settlements of Sturton by Stow with Brattleby and Aisthorpe. Thorpe Lane serves a small number of dwellings and farmsteads that are set close to the road frontage including Clandon House, The Lodge, Thorpe Lane Farm and Glebe Buildings. To the east, the B1398 (Middle Street) forms an almost continuous and well-defined edge and is a strong feature within the landscape where the landform rises distinctly to form the limestone capped scarp slope. To the west, the boundary of the Site/Sites is defined by Fleets Lane, in part, which links the settlements of Sturton by Stow with Stow Pasture. The lane runs in a straight north direction and serves only one property known as Fleets Cottages. To the central part of the Site/Sites, there is a local lane leading west from Cammeringham that serves two properties known as Cold Harbour and Blackthorn Hill. The network of watercourses provides access for recreation for fishing, walking, and experiencing nature but the River Till corridor is devoid of access. Appreciation of the river corridor can only generally be experienced at the section between Tillbridge Road and Thorpe Lane and crossing points with the local roads. The villages have a broad landscape setting due to the absence of woodlands and flat, low-lying landscape and views from the B1241 of the village churches are particularly important. The area around Thorpe Lane exhibits the balance between outlying farmsteads and the clustered villages of Sturton by Stow, Cammeringham, Brattleby and Aisthorpe. The tracts of open farmland are an important feature in this balance.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change for the Cottam 1 Site/Sites (Settlements, Industry, Commerce, and Leisure), recent trends have shown that urban expansion on the edge of the main settlements has eroded the predominantly rural character. While the power stations and sugar beet factory provide a sense of place, their scale is very dominant. This is especially relevant to the coal powered power stations that stand in the flat low-lying landscape. Other major industrial developments are focused along the Trent flood plain corridor including industrial estates, sewage treatment works and active sand and gravel extraction sites. The aim should be to manage and further enhance access via the network of quiet lanes, villages, footpaths, and watercourses. Extension of the non-road network, especially where it can link people to the river corridors and other areas for recreation.<br><br>**Overall**, the aim is to ensure new developments are well-integrated with well designed, green infrastructure and resist new development that threatens tranquility. The aim is also to conserve the strongly nucleated character by encouraging new development to take place within the existing curtilage of settlements. Enhancing and promoting access to river corridors for recreation and health benefits. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects given the sensitivity of the rural roads and minor farm tracks. The edges of the villages, the sequence of views to the churches and the avenues and lines of trees on the approaches to farms are also sensitive features. The balance between clustered villages and their adjacent, outlying farmsteads is an important characteristic. | *Scenic:* There is a string of small, nucleated settlements on the limestone capped scarp slope that add to the sequence of views, especially towards landmark churches such as the Grade II* Listed Church of St. Cuthbert at Brattleby.<br><br>*Cultural:* Lincoln Cathedral is a prominent landmark on the skyline along with other church spires of the surrounding settlements. Where the farmhouses are set back from the road's lines of trees such as horse chestnuts form distinctive features, and this is particularly noticeable at Thorpe le Fallows.<br><br>*Natural:* The quiet rural lanes provide opportunities for wildlife corridors across the area.<br><br>*Recreation and Enjoyment:* Recreation is provided by numerous small country lanes and there are few public rights of way (PRoW). This is a landscape of long views towards the west of the power stations and towards the east of the string of settlements that line the limestone capped scarp slope.<br><br>*Local Distinctiveness and Sense of Place:* The coal fired power stations exert a visual influence over a wide area, mostly with the plumes that rise from them and the pylons and power lines that pass across the outlying landscape.<br><br>*Health and Wellbeing:* There is a public right of way (PRoW) network associated with the river Trent corridor, otherwise access for recreation is limited to the local lanes, in particular Thorpe Lane which is a quiet backwater relative to the other local lanes.<br><br>*Important Spatial Function:* The long westward views to the power stations on the River Trent are key to the spatial qualities of the area.<br><br>**Overall**, the value of Settlements, Industry, Commerce, and Leisure for the Cottam 1 Site/Sites is shaped by the nature of the predominantly rural and sparsely settled area with small villages and dispersed farms linked by quiet rural lanes, contrasting with the busy city of Lincoln and town of Gainsborough. The villages have a broad landscape setting and the sequence of views towards churches is an important feature along with the other long views across the landscape. | *Character:* The string of small, nucleated settlements on the limestone capped scarp slope add to the sequence of views and help define the settled character of the landscape.<br><br>*Quality:* Where the farmhouses are set back from the road's lines of trees such as horse chestnuts form distinctive features, and this is particularly noticeable at Thorpe le Fallows. The farmsteads and dwellings add a positive character to the local network where there are associated heritage features.<br><br>*Value:* The long westward views to the power stations on the River Trent are key to the spatial qualities of the area and the pattern of settlement.<br><br>*Capacity:* The landscape has some vulnerability to unsympathetic development, due to the predominantly rural and sparsely settled area with small villages and dispersed farms linked by quiet rural lanes. Although these features are generally commonplace, they add a particular sense of place. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium to High (5km Study Area) | Medium to High (5km Study Area) | **Medium to High** | |
| Medium (Site/Sites) | Medium (Site/Sites) | **Medium** | |

| Landscape Receptor – Settlements, Industry, Commerce, and Leisure (Cottam 1 Site/Sites) | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be predominantly screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, and some limited views from Brattleby, Coates Fillingham, Ingham, Stow and Sturton by Stow may be possible, but this would be short term.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not affect any of the settlements or other commercial/industrial areas in this area. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. Development would not have any adverse effects on the integrity of the local settlements. | There will be very minor enhancements to leisure pursuits within the locality with a small number of PRoW being enhanced through tree and hedge planting adjacent to the Cottam 1 Site/Sites.<br><br>The proposed development will have little effect on local industry and commerce although the introduction of the solar farm will provide some additional traffic to the roads and lanes locally. Mitigation will be in the form of tree, hedge, and shelterbelt planting as well as shrub and grassland areas which will both screen views of the additional traffic and provide benefits in terms of reducing noise and carbon impacts.<br><br>The settlements locally (Brattleby, Coates Fillingham, Ingham, Stow and Sturton by Stow) will not be affected and their proximity to the Cottam 1 Site/Sites will be separated through the proposed mitigation. This mitigation will include strong boundary vegetation screening views from the nearest public vantage points and enhancing the settlement settings where they are in an appropriate context. The overall increase in vegetative cover and the reduction of over intensively farmed arable land will have benefits locally both in landscape character and visual terms and with regard to a considerable increase in the biodiversity around settlements/isolated dwellings across the area.<br><br>The development will have no adverse effects on the larger settlements such Gainsborough, Newark-on-Trent, Nottingham, Lincoln, and Grantham due to its distance from these locations.<br><br>There is potential that a small number of farm buildings will be lost/reutilised due to the change in the arable production within the Cottam 1 Site/Sites.<br><br>There will be no industrial development associated with the use of the Cottam 1 Site/Sites, and other built infrastructure associated with the solar farm will be limited to temporary (but long term) buildings with the overall development having an anticipated life span of 40 years.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following measures:<br><br><u>Cottam 1 South:</u><br><br>Along Thorpe Lane, shelterbelt planting, scattered tree belts, new and enhanced hedgerows are being bought | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br>Views from the adjacent settlements and commercial/industrial units will be screened in the close to mid-range proximity due to the presence of the new hedgerows, scattered tree, and shelterbelt planting together with the enhancement of existing hedgerows which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with the addition of shelterbelt and scattered tree planting around the boundary of the Site/Sites with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining the overall character of the area.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>By Year 15, additional vegetated cover will have established and begun to mature, enhancing the local landscape character and likewise the setting of the local settlements, smallholdings, and isolated dwellings across the area. Additional traffic will have been mitigated by improvements to roadside vegetation where possible within the Order limits. Some PRoW and recreational routes along minor roads will be | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | forward with the Scheme. A new hedgerow is also proposed and will be set back from the War Memorial Site adjacent to Thorpe Lane within the settlement of Thorpe le Fallows To the east of the Cottam 1 Site/Sites, existing vegetation including woodlands at Brattleby Gorse and new and enhanced hedgerows with hedgerow trees will help to provide separation and screening with the settlements of Brattleby and Cammeringham. To the north of the Cottam 1 Site/Sites, new and enhanced hedgerows bordering the northeast boundary of the Cottam 1 North and South Site/Sites will mitigate views from Ingham to the east.<br><br>To the west, scattered trees adjacent to the River Till, shelterbelt planting and enhanced hedgerows will mitigate any impact on the settlement of Sturton by Stow.<br><br><u>Cottam 1 North:</u><br><br>To the north of the Cottam 1 North Site, enhanced hedgerows to the north of the area of panels within the B fields will mitigate effects from this direction. The main area of panels is mitigated to the north by a mixture of enhanced hedgerows, where appropriate, and a new hedgerow to field C3 where this is currently gappy and absent. There will also be long blocks of shelterbelt planting across the Cottam 1 Site, particularly to the south, where a shelterbelt is proposed adjacent to the River Till and is associated watercourses. There will be enhanced hedgerows elsewhere on this boundary with the River Till to improve biodiversity connections to the river corridor and a block of shelterbelt planting adjacent to the PRoW in field C25.<br><br>To the east of the Cottam 1 North Site, there may be potential intervisibility with Ingham and Fillingham villages, but existing vegetation is augmented by a belt of scattered trees adjacent to the River Till and its associated watercourses and drains. A new hedgerow is also proposed adjacent to the PRoW (Fill/86/1) to the east of the Site/Sites, running in a north-south direction.<br><br>On the western boundary of the Cottam 1 North Site/Sites, successional scrub planting will augment existing woodland belts, with some scattered trees to the northeast and a new hedge to the west of field C2. Generally new hedgerows are proposed where none currently exist to enhance the field boundary framework and mitigate views towards the panel's areas. The main area of panels are located beyond the strong existing tree belt and associated woodland at Larch Plantation and Fillingham Low Wood. | enhanced through additional planting creating more intimate and less exposed routes.<br><br>The local settlement and commercial/industrial facilities are able to accommodate the Scheme without undue adverse effects. The proposed Scheme will have no adverse effects in the physical integrity of the settlements adjacent to the Site and there will be beneficial effects in terms of local tree/hedge cover and biodiversity net gains enhancing the local character and the setting of these settlements.<br><br>**Overall,** in terms of mitigation for the Cottam 1 Site/Sites, due to the sensitivity of the man-made interventions the aim is to raise awareness of the distinctive settlement, industry, commerce, and leisure features and to raise the value that people place on them to help protect and enhance the area. The aim is to conserve settlement pattern by ensuring that development is complimentary to intrinsic local character. Trees and hedgerows make an important contribution to the landscape setting of villages and their management should be a priority, particularly when associated with farmsteads and large-scale agricultural buildings. Lines of trees in characteristic locations should also be retained and enhanced. | |

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| | | Potential views from Fillingham village would be mitigated with a new hedge to the southeast of fields B2 and B3 with existing woodland to the southeast of this area also helping to curtail visibility. Enhanced hedgerows to the eastern boundary of B4 also help to mitigate views in this direction.<br><br><u>Cottam 1 West:</u><br><br>Shelterbelts and enhanced hedgerows augment the existing vegetation to the west of the Cottam 1 Site/Sites with scattered tree belts adjacent to the River Till towards the south and existing vegetation further north being retained. Large areas of bird mitigation are also proposed between the Site/Sites and the settlement in the west at Willingham by Stow and Stow.<br><br>Shelterbelt planting is also proposed to mitigate views from dwellings along the Ingham Road looking north, whilst new and enhanced hedgerows are proposed to the northern boundary of the Cottam 1 Site/Sites. There would also be shelterbelt planting to the western boundary of the Cottam 1 Site/Sites and to the south of the Ingham Road to assist with the integration of the panel areas in the west.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Settlements, Commerce and Industry:<br><br>- Grassland reversion around settlements<br>- A more varied landscape in terms of management and vegetation<br>- Less intensively managed land around settlement edges<br>- Potential for grazing around settlement edges<br>- General water quality improvements<br>- Soil improvements<br>- Increased woodland/vegetation cover<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Enhancement and strengthening of the Local Character Area<br><br>Adverse effects (mitigated):<br><br>- Panels and structures across the landscape<br>- Increased traffic through local routes and some settlements<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include | | |

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| | | secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor-Moderate **Not Significant** | Minor-Moderate **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Settlements, Industry, Commerce, and Leisure (Cottam 1 Site/Sites)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 1 Site with the other Cumulative Sites (Cottam 2 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes to the settlements, industry, commerce and leisure due to the scope for additional vegetation enhancing the local landscape character and likewise the setting of the local settlements and their approaches, and particularly in the context of the church spires. The existing landscape character associated with the outer edges of these settlements of the Cumulative Sites and Study Area is predominantly woodland and tree cover around the margins and the change to grassland with scattered trees and a significantly improved hedgerow networks would give rise to overall benefits to landscape character in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual settlement, industry, commerce, and leisure elements or features of the landscape within the Cottam 1 Site/Sites. The nature of the predominantly rural and sparsely settled wider area with small villages and dispersed farms linked by quiet rural lanes, contrasting with the busy city of Lincoln and town of Gainsborough is the main spatial function of the landscape. This spatial function is tempered by the villages that have a broad landscape setting and the sequence of views towards churches, which is an important feature along with the other long views across the landscape, which have scope for enhancement.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam Power Station and the Cottam 1 Site/Sites and extending between the Cottam 1 Site/Sites and the Cottam 2 Site (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.1 [C6.4.8.15.1.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the Cable Route Corridor, Cottam 2, and Cottam 3a and 3b Sites and the Cable Routes Corridor would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the road and local lane network with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual settlement, industry, commerce, and leisure elements or features of the landscape within the Cottam 1 Site. The nature of the predominantly rural and sparsely settled area with small villages and dispersed farms linked by quiet rural lanes, contrasting with the busy city of Lincoln and town of Gainsborough. The villages have a broad landscape setting and the sequence of views towards churches is an important feature along with the other long views across the landscape.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam Power Station and the Cottam 1 Site/Sites and extending between the Cottam 1 Site/Sites and the Cottam 2 Site (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cotton 1 Site/Sites and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 1, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site. |

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| | and built form would also curtail cumulative visibility between these cumulative sites and the Cable Route Corridors.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites and the Cottam 2 Site, located to the:<br>• east of Upton and to the south of Sturgate Airfield<br>• south of Kexby in the locality of Valley Farm<br>• east of Willingham by Stow in the locality of the residential property known as Carisbrooke<br>• east of Stow, just to the east of the property known as Tam Howes; and<br>• west of Sturton by Stow, extending from West Syke Lane as far as Normanby by Stow.<br><br>The landscape has some vulnerability to unsympathetic development, due to the predominantly rural and sparsely settled area with small villages and dispersed farms linked by quiet rural lanes. Although these features are generally commonplace, they add a particular sense of place and offer the scope for landscape improvements to benefit views across the landscape.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2 Site, and Cottam 3a Site, located to the:<br>• northeast of Sturton by Stow, extending between Tillbridge Road and Ingham Road.<br><br>Recreation is provided by numerous small country lanes and there are few public rights of way (PRoW). This is a landscape of long views towards the west of the power stations and towards the east of the string of settlements that line the limestone capped scarp slope from this location.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2 Site, and Cottam 3b Site, located to the:<br>• northeast of Sturton by Stow, extending between School Lane Farm and Ingham Road.<br><br>The villages have a broad landscape setting due to the absence of woodlands and flat, low-lying landscape and views from the B1241 of the village churches are particularly important. The area around Thorpe Lane exhibits the balance between outlying farmsteads and the clustered villages of Sturton by Stow, Cammeringham, Brattleby and Aisthorpe. The tracts of open farmland are an important feature in this balance.<br><br>There are local patches of intervisibility between All Sites comprising the landscape to the:<br>• east boundary of the Cottam 1 North Site/Sites, extending from Glentworth in the north as far as Ingham in the south.<br><br>Where the farmhouses are set back from the road's lines of trees such as horse chestnuts form distinctive features, and this is particularly noticeable at Thorpe le Fallows. The farmsteads and dwellings add a positive character to the local network where there are associated heritage features.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]** | **Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 1 Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 1 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow**.**<br><br>The nature of the predominantly rural and sparsely settled wider area with small villages and dispersed farms linked by quiet rural lanes, contrasting with the busy city of Lincoln and town of Gainsborough is the main spatial function of the landscape. This spatial function is tempered by the villages that have a broad landscape setting and the sequence of views towards churches, which is an important feature along with the other long views across the landscape, which have scope for enhancement.<br><br>*Overall Character of the Landscape and Settlement, Industry, Commerce and Leisure*<br>Overall, the character of the landscape and the settlement, industry, commerce, and leisure is shaped by the trees and hedgerows that make an important contribution to the landscape setting of villages. The edges of the villages, the sequence of views to the churches and the avenues and lines of trees on the approaches to farms are also important. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape and its settlement features. Moreover, these features are often set within a well-vegetated context and the associated built form plays a positive role in reducing the overall cumulative effects. |

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| | **Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape and Settlement, Industry, Commerce and Leisure*<br>Overall, the character of the landscape and the settlement, industry, commerce, and leisure is shaped by the trees and hedgerows that make an important contribution to the landscape setting of villages. The edges of the villages, the sequence of views to the churches and the avenues and lines of trees on the approaches to farms are also important. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape and its settlement features. Moreover, these features are often set within a well-vegetated context and the associated built form plays a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is very low and very for the Cumulative Sites because there are minor patches of small cumulative change to a limited area of medium sensitivity, affecting some characteristics without altering the overall impression of its character. | |
| **Magnitude** | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1) **with only** Embedded Mitigation: Very Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Negligible **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

| Landscape Receptor – Settlements, Industry, Commerce, and Leisure (Cottam 2 Site) |
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| **Receptor Baseline:**<br><br>Within the Cottam 2 to Cottam 3a and 3b Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**.<br><br>The landscape is characterised by the Trent flood plain corridor, including power stations, and associated overhead power lines, industrial estates, sewage treatment works and active sand and gravel extraction sites. The flood plain is bordered by large urban areas including the cities of Nottingham and Lincoln and there are also scattered rural settlements perched on the edge of the floodplain. Overall, the character of the flood plain is predominantly rural.<br><br>The Settlements, Industry, Commerce and Leisure network is broadly defined to the southwest by the large settlement of Gainsborough (approximately 6km) which is Britain's most inland port and one of the main cities within the area along with Newark-on-Trent, Nottingham, Lincoln, and Grantham. Pilham is located approximately 2.2km to the northwest, Blyton is located approximately 3.6km to the northwest, beyond which lies Laughton all outside the Study Area and the other smaller settlements to the north are typically villages of Medieval origin such the small hamlets of Gilby, Dunstall and Southorpe. To the southeast, the city of Lincoln is a prominent landmark with the Cathedral that captures the skyline in views across the area. Other settlements to the south include a small string of villages to the south of the A631 (Corringham Road) and include Springthorpe, Sturgate, Heapham, Upton and Kexby that form a local cluster in an alignment true to the River Till. To the east, the landscape is defined by compact villages and dispersed farmsteads with the A15 (Ermine Street), which is also a Roman road, following a distinctive straight alignment along the limestone capped scarp slope. Ermine Street connects the city of Lincoln from the south as far as the Humber Estuary in the north. The B1398 (Middle Street) also passes along the scarp slope diverting from its almost parallel alignment with Ermine Street to form a wide curve. This historic route supports a string of small settlements to the north of the A631 (Corringham Road) including Hemswell (approximately 5.5km), Willhoughton (approximately 5km), Blyborough (approximately 5.2km) and Grayingham (approximately 9km). Finally, to the west, the market town of Gainsborough on the east bank of the River Trent, its associated road networks and industry form the main area of settlement since this is the crossing point of the east-west A631. Corringham located approximately 600m to the south-west is the only other main settlement to the east of Gainsborough following the route of the A631. West Lindsey District Council currently has its offices in Gainsborough and the town has two railway stations and West Burton Power Station is approximately 5km to the south-west of the town, next to the Sheffield-Lincoln Railway Line. With the exception of the market towns/villages/hamlets mentioned above, the area is relatively sparsely populated with isolated residential properties and farmsteads dotted throughout the surrounding countryside.<br><br>**Key Features:**<br><br>This is an area of land that is broadly defined to the north by settlements associated with Pilham Lane, Green Lane and Pilham Lane. Along this route there are only a very small number of isolated farmsteads, some which stand back from the road, forming a distinguished collection of buildings including Old Hall, Hall Farm, Moscar Farm and Aisby House Farm. Other residential properties include The Cottage and Corringham Grange Farm, which are located to the south-west extent of the Site/Sites. To the south of the Site/Sites, the area is also largely devoid of settlement, industry, commerce, and leisure uses apart from the small sewage works on Springthorpe Road. There are residential properties known as Magin Moor Cottages adjacent to the A631 (Corringham Road) and Grange Cottage off School Lane to the east of Springthorpe. Farmsteads include New Church Farm, Springthorpe Grange, Hemswell Grange and Harpswell Grange, which are scattered across the landscape between Springthorpe and Hemswell. Springthorpe is located approximately 1.9km to the south with Heapham and Upton located beyond Springthorpe to the southeast.To the east, Northorpe is located at approximately 590m and Willoughton is located approximately 4km to theNortheast. Hemswell is located approximately 4km to the southeast, Harpswell is located approximately 5km to the southeast all outside the Study Area. To the west, the Site/Sites are defined East Lane, which passes to the east of Corringham in and east-west direction and then takes a turn to head north-south to connect with Pilham Lane. East Lane follows the course of Coringham Beck for approximately 400m at the southern end where it makes a right-angled turn to head north. To the central part of the Site/Sites, the two properties, The Cottage and Corringham Grange Farm served by minor tracks are the only features, otherwise there are no other associated settlement, industry, commerce, and leisure uses within this area. The Cottam 2 Site lies wholly within the Parish of Corringham which is surrounded by the parishes of Pilham, Blyton, Northorpe, Blyborough, Willoughton, Hemswell, Harpswell, Springthorpe, Upton, Lea, Gainsborough and Thornock. |

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
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| In terms of forces for change for the Cottam 2 Site (Settlements, Industry, Commerce, and Leisure), recent trends have shown that the upgrades to roads across the area, often from single to a dual carriageway have triggered change in terms of settlement and development. Apart from the construction associated with bridges and embankments to support these road upgrades residential and business development has also expanded in association with these works. Given the close proximity to Gainsborough the main elements of change are the noise and visual intrusion of the traffic using the A631. The impact on the local lanes that feed into the A631 is also a consideration such as locations close to Springthorpe Road, East Lane, the local road to Yawthorpe, Pilham Lane and Mill Mere Road.<br><br>**Overall**, the aim is to ensure that road improvements and associated new development protect the character of the local lanes from noise, visual intrusion, and construction interventions. Pressure on the land for arable agriculture and competing demands of farm diversification are also leading to the introduction of large-scale buildings and parking/visitor attractions to stem from farmsteads in quiet rural locations, which is causing significant change to the rural character of the area in some parts. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects given the tranquility of the areas away from the main road networks is under threat. The balance between promoting industry, commerce and leisure and the impact on the rural settlements and local lanes is an important consideration, especially where these features are in close proximity the larger settlements and market towns such as Gainsborough. | *Scenic:* Despite the importance of nucleated settlements in this area, they are frequently hidden from view by tall hedgerows that border the local lanes. The setting of settlements are therefore more widely appreciated in long views east and west across the area.<br><br>*Cultural:* The church spires and tower of the scarp slope settlements form a prominent landmark on the skyline along with the large farmsteads that occupy the rising land in the foreground.<br><br>*Natural:* The quiet rural lanes provide opportunities for wildlife corridors across the area especially where they are associated with the waters course such as with East Lane and Corringham Beck.<br><br>*Recreation and Enjoyment:* This is a landscape of long views towards the west of the power stations and towards the east of the string of settlements that line the limestone capped scarp slope. Some of the local lanes provide a quiet backwater to appreciate these views but closer to the major roads the recreation and enjoyment factors significantly diminish.<br><br>*Local Distinctiveness and Sense of Place:* There is a string of small, nucleated settlements on the limestone capped scarp slope that add to the sequence of views, especially towards Willhoughton and Willhoughton Cliff where the associated woodlands form a strong feature on the horizon.<br><br>*Health and Wellbeing:* Recreation is provided by numerous small country lanes and there are few public rights of way (PRoW) which connect these lanes and provide scope for circular routes across the area.<br><br>*Important Spatial Function:* Where the farmhouses are set back from the roads, they form a distinctive group of buildings and associated tree cover. This is particularly noticeable at Aisby Farm, Moscar Farm and Hall Farm.<br><br>**Overall**, the value of Settlements, Industry, Commerce, and Leisure for the Cottam 2 Site is shaped by the nucleated nature of the settlement pattern that adds to the sense of place in views across the area. However, in places the scale of major roads such as the A631 (Corringham Road) dominates the landscape and overpowers the sense of place. This is particularly evident in capturing the long westward views to the power stations on the River Trent and views towards the limestone capped scarp slope in the east. | *Character:* Despite the importance of nucleated settlements in this area, they are frequently hidden from view by tall hedgerows that border the local lanes, meaning they give a reduced contribution to landscape character.<br><br>*Quality:* The setting of settlements are more widely appreciated in long views east and west across the area rather than at close range due to the abundance of hedgerows and tree cover around their edges.<br><br>*Value:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Aisby, Corringham and Pilham. The landscape surrounding these settlements retain a deeply rural and tranquil character.<br><br>*Capacity:* The nucleated nature of the settlement pattern adds to the sense of place in wide views across the area. However, in places the scale of major roads such as the A631 (Corringham Road) dominates the landscape and overpowers this sense of place, leaving the landscape more vulnerable to change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium to Low (Site/Sites) | Medium to Low (Site/Sites) | **Medium to Low** | |

| Landscape Receptor – Settlements, Industry, Commerce, and Leisure (Cottam 2 Site) | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be predominantly screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, and some limited views from Corringham may be possible, but this would be short term.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not affect any of the settlements or other commercial/industrial areas in this area. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. Development would not have any adverse effects on the integrity of the local settlements. | The proposed development will have little effect on local industry and commerce, although the introduction of the solar farm will give rise to some minor additional traffic to the roads and lanes locally. Mitigation will be in the form of tree, hedge, and shelterbelt planting as well as shrub and grassland areas which will both mitigate views of this additional traffic and provide benefits in terms of reducing noise and carbon impacts.<br><br>The settlements locally will be protected through the proposed mitigation at the boundary of the Site/Sites with distinctive areas of tree cover to enhance the settlement settings where they are in close proximity to the proposed Scheme. The overall increase in vegetative cover and the reduction of over intensively farmed arable land will have benefits locally both in landscape character and visual terms. There will also be a considerable increase in the biodiversity around settlements/isolated dwellings across the area.<br><br>The Scheme will have no adverse effects on the larger settlements such as Gainsborough, Newark-on-Trent, Nottingham, Lincoln, and Grantham due to its distance from these locations.<br><br>There is potential that a small number of farm buildings will be lost/reutilised due to the change in the arable production within the Site(s).<br><br>There will be no industrial development associated with the use of the Cottam 2 Site/Sites, and other built infrastructure associated with the solar farm will be limited to temporary (but long term) buildings with the overall development having an anticipated life span of 40 years.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following measures:<br><br>Development is set back 300m from the village of Corringham to the west of the Site to provide scope for additional planting along this boundary.<br><br>A 5m wide shelterbelt is to be planted to the western boundary of the Site and although this will be immature at Year 1, existing vegetation adjacent to the settlement will predominantly obscure views of the Site. | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views from the adjacent settlements and commercial/industrial units will be screened in the close to mid-range through the new hedgerows, scattered tree and shelterbelt planting together with the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality hedgerows both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with the addition of shelterbelt and scattered tree planting around the Site with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining its overall character of the area.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>By Year 15, the shelterbelt, hedgerow, and scattered tree planting will have established and begun to mature, enhancing the local character area and therefore the setting of the local settlements, smallholdings, and isolated dwellings. Additional traffic will have been mitigated by improvements to roadside vegetation where possible within the Order limits. Some PRoW and recreational routes along minor roads will be enhanced through additional | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | Development is set back some 750m from the village of Aisby and proposed scattered tree and hedge planting on the north-eastern boundary of the Site will help to mitigate any views.<br><br>New native hedgerow planting to the field boundaries will be introduced where appropriate and existing hedgerows will be allowed to grow out. Proposed and existing hedgerows to be managed at 5m. Hedgerow trees will be added to existing hedges to further screen views.<br><br>Enhancements to the overall level of tree cover will have a minor but beneficial effect on the setting of the Settlements locally, and although proposed vegetation will be immature at this point it will have established, and existing planting will have been allowed to start growing out.<br><br>These Settlement landscape receptors are able to accommodate the development without undue adverse effects and there will be beneficial effects in terms of local tree/hedge cover and biodiversity net gains.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Settlements, Commerce and Industry:<br>- Grassland reversion around settlements<br>- A more varied landscape in terms of management and vegetation<br>- Less intensively managed land around settlement edges<br>- Potential for grazing around settlement edges<br>- General water quality improvements<br>- Soil improvements<br>- Increased woodland/vegetation cover<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Enhancement and strengthening of the Local Character Area<br><br>Adverse effects (mitigated):<br>- Panels and structures across the landscape<br>- Increased traffic through local routes and some settlements<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | planting creating more intimate and less exposed routes.<br><br>The local settlement and commercial/industrial facilities locally are able to accommodate the development without undue adverse effects on landscape character. The proposed development will have no adverse effects in the physical integrity of the settlements adjacent to the Site and there will be beneficial effects in terms of local tree/hedge cover and biodiversity net gains enhancing the local character.<br><br>**Overall**, in terms of mitigation for the Cottam 2 Site, due to the close proximity to the market town of Gainsborough, the aim is to conserve the rural settlement pattern of the outlying villages. Any development should be complimentary to intrinsic local character and the nucleated form of the settlements is a key feature, especially in long views across the area. Mitigation measures should also aim to minimize car use to protect the tranquility of the area and any development should consider well designed green infrastructure. | |
| **5km Study Area:** | | | | |

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| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor-Moderate **Not Significant** | Minor-Moderate **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Settlements, Industry, Commerce, and Leisure (Cottam 2 Site)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 2 Site with the other Cumulative Sites (Cottam 1 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes to the settlements, industry, commerce and leisure due to the scope for additional vegetation enhancing the local landscape character and likewise the setting of the local settlements and their approaches, and particularly in the context of the church spires. The existing landscape character associated with the outer edges of these settlements of the Cumulative Sites and Study Area is predominantly woodland and tree cover around the margins and the change to grassland with scattered trees and a significantly improved hedgerow networks would give rise to overall benefits to landscape character in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual settlement elements or features of the landscape within the Cottam 2 Site.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.2 [C6.4.8.15.1.2]** which shows that with the Cottam 2 Site, cumulative visibility with the Cottam 1 Site/Sites and the Cottam 3a and 3b Sites would not be experienced across the entirety of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of intervisibility between the Cottam 2 Site and with the 3a and Cottam 3b Sites extending from the:<br>• South boundary of the Cottam 2 Site, starting at the eastern edge of Corringham and reaching as far as Yawthorpe Beck and Yawthorpe<br>• West boundary of the Cottam 2 Site, extending as far as Pilham Lane<br>• East boundary of the Cottam 2 Site, extending as far Yawthorpe and Yawthorpe Fox Covert<br>• Northwest boundary of the Cottam 2 Site, extending as far as the Cottam 3a and 3b Site. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the road and local lane network with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual settlement elements or features of the landscape within the Cottam 2 Site. The wider landscape is typified by The Settlements, Industry, Commerce and Leisure network is broadly defined to the southwest by the large settlement of Gainsborough.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.2 [C6.4.8.15.2.2]** which shows that with the Cottam 2 Site, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 2 and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 1, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 1 Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge |

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| | Where the farmhouses are set back from the roads, they form a distinctive group of buildings and associated tree cover. This is particularly noticeable at Aisby Farm, Moscar Farm and Hall Farm. When these farmhouses are set in woodland or tree cover, they provide points of enclosure and intimacy along the long straight roads.<br><br>There is a local patch of intervisibility between the Cottam 2 Site and with the Cottam 3b Site, comprising the:<br>• Northern-most tip of the Cottam 2 Site extending across the medieval village of Dunstall as far as the medieval village of Southorpe; and<br>• Southeast of the River Eau, extending as far as Huckerby Farm and Huckerby Bungalows.<br><br>The intensive agricultural land use also contributes to the abundance of farmsteads and these features make a significant contribution in breaking down the visibility between the cumulative sites.<br><br>There are local patches of intervisibility between All Sites comprising the:<br>• North of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe<br>• West of the settlement of Corringham, extending from Staplegate House as far Windy Ridge on Pilham Lane<br>• West of Springthorpe, extending across the landscape as far as Harpswell Low Farm; and<br>• East of Yawthorpe, extending as far as Hemswell.<br><br>The presence of settlement in the open landscape such as Yawthorpe brings mature trees and woodland cover to the landscape setting of the cumulative sites, and this helps in providing separation and screening between them.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape and Settlement, Industry, Commerce and Leisure*<br>Overall, the character of the landscape and the settlement, industry, commerce, and leisure is shaped by the setting of settlements are more widely appreciated in long views east and west across the area rather than at close range due to the abundance of hedgerows. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its land use features. Moreover, these features are often set within a well-vegetated context and the associated built form plays a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is very low and very for the Cumulative Sites because there are minor patches of small cumulative change to a limited area of medium sensitivity, affecting some characteristics without altering the overall impression of its character. | Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 1 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.<br><br>The wider landscape is typified by The Settlements, Industry, Commerce and Leisure network is broadly defined to the southwest by the large settlement of Gainsborough. The nature of the predominantly rural and sparsely settled wider area with small villages and dispersed farms linked by quiet rural lanes, contrasting with the busy city of Lincoln and town of Gainsborough is the main spatial function of the landscape. This spatial function is tempered by the villages that have a broad landscape setting and the sequence of views towards churches, which is an important feature along with the other long views across the landscape that have scope for enhancement.<br><br>*Overall Character of the Landscape and Settlement, Industry, Commerce and Leisure*<br>Overall, the character of the landscape and the settlement, industry, commerce, and leisure is shaped by the setting of settlements are more widely appreciated in long views east and west across the area rather than at close range due to the abundance of hedgerows. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its land use features. Moreover, these features are often set within a well-vegetated context and the associated built form plays a positive role in reducing the overall cumulative effects. |

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| **Magnitude** | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1) **with only** Embedded Mitigation: Very Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Negligible **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

| Landscape Receptor – Settlements, Industry, Commerce, and Leisure (Cottam 3a and 3b Sites) |
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**Receptor Baseline:**
Within the Cottam 3a and 3b Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales is located within the 2km Study Area, but only extending across its eastern most part, then sharing the western most part with RLCT Profile 4b: Wooded Vales. The landscape character type then occupies an eastern part of the 5km Study Area where it shares a boundary with Kirton in Lindsey. The western part of the 5km Study Area then comprises of a mixture of RLCT 2b: Planned and Drained Fens and Carrlands, RLCT 4a: Unwooded Vales and RLCT 4b: Wooded Vales, The Unwooded Vales is generally characterised by mixed agriculture set within an enclosed landscape of low, well-maintained hedgerows.
The Sites within Cottam 3 (2km Study Area) can be sub-divided into two distinct land areas.

- Cottam 3a
- Cottam 3b

**Key Features:**
Cottam 3a:
This is an area of land that is broadly defined to the north by a sparse settlement pattern and a limited major road network that mainly comprises the A159, which connects to the larger settlement of Scotter and then beyond to Scunthorpe. There are the small settlements of Laughton (approximately 1.8km) to the northwest and Scotton (approximately 2.5km) to the north-east, otherwise there are scattered farmsteads and isolated dwellings across the area. The farmsteads include Hall Farm, Park Farm, Mount Pleasant Farm and Grange Farm. Some of these farmsteads are set by from the main road network and are assimilated into the landscape by their associated trees and woodland cover and so their presence in the landscape is not highly evident. To the south, Kirton Road runs in an east west straight alignment connecting to settlement of Blyton (approximately 970m) which is located to the south-west of the Site/Sites. This is a busy road which provides access to the occasional farmsteads that are set back along its route. These farmsteads include The Fields Farm, Grange Farm and Top Farm. Beyond this local collection of farmsteads to the south side of Kirton Road the mainline railway runs almost parallel with a minor tributary of the River Trent known as Laughton Highland Drain. The railway line crosses over Pilham Lane to the east at Blyton Level Crossing, which is an un-manned and un-automated rural level crossing. To the east, Kirton Road passes through the landscape with some right-angled bends and then beyond connects with the A15 (Ermine Street). Kirton Road provides access to the small settlements of Northorpe (approximately 1.8km) and Grayingham (approximately 5.4km) and the main settlement of Kirton in Lindsey (approximately 6km) and a number of farmsteads and agricultural businesses. The mainline railway takes a route to the north-west side of Kirton in Lindsey where the station is set away from the town centre. The railway therefore runs through the landscape to the east of the Site/Sites via a series of cuttings and embankments to take account of the more undulating landform and associated watercourses. The farmsteads to the east comprise of Southorpe Farm associated with the Medieval village of Southorpe, Cold Harbour Farm and Blenheim Farm. Residential properties are very scarce to the east and mainly occur to the east of Monson Road and Southorpe Lane to include Swinedyke Cottage, Parkside and Grayingham Lodge that are set close to the road frontage. To the west, the Site/Sites are defined by the A159, Laughton Road which passes north and skirts the eastern edge of Laughton Wood where settlement includes Blyton Grange, Willow Tree Farm and Pyewipe Hall Farm. These farmsteads are generally set back from the main roads are often associated with surface water reservoirs and assimilated into the landscape by their associated tree and woodland cover. To the central part of the Site/Sites, there are several tracks associated with the former airfield use and current use as the Blyton Park Driving Centre. There is also a collection of tracks that serve Blyton Grange and Blue Bell Farm at the northeast corner of the Site/Sites. The former airfield is interspersed with arable land use and a series of concrete roads and large open concrete areas are testament to its former use.

Cottam 3b:
This is an area of land that is mostly bordered to the north by the mainline railway that passes between Gainsborough and Grimsby via Kirton in Lindsey and Brigg. Beyond the railway line, the B1205 (Kirton Road) passes in a broad east west direction. This road provides access to several farmsteads including Grange Farm, The Fields Farm and Top Farm and is a busy road which provides a direct link to Blyton from the A15. Beyond the B1205 (Kirton Road), the former Blyton Airfield occupies the higher ground to the east of the A159 (Laughton Road) between Blyton and Northorpe villages. The airfield was constructed in 1942 and feature three runways, 35 parking lots for aircraft and three hangars and was a former Royal Force airfield used during the Second World War. It is now used for off-road racing cars, rally driving and test running for refurbished and/or new designs of trucks. To the south, Green Lane takes an east-west route and is part of the local road network between Pilham in the west and Pilham Lane in the east. This road takes an indirect alignment with several right-angled bends and serves a single property called Home Farm and forms a junction with Pilham Lane at Bonsdale Farm. Beyond Green Lane, the landscape comprises of minor networks of local lanes that lead from Pilham Lane in an east-west direction. These lanes provide access to the sites of a series of Medieval villages including Gilby Village and Dunstall Village. Other farmsteads are found to the south of the Site/Sites within this grid network of local lanes and include Northfield Farm, Westfield Farm, Mill Farm, Hall Farm, Corringham Grage Farm, Aisby House Farm and Moscar Farm. Beyond this grid network of roads, the settlement of Corringham (approximately 3km) is located to the east of Gainsborough. To the east, the Site/Sites are bordered by Pilham Lane, which takes a north south direction connecting Kirton Road in the north and with Aisby and Gilby in the south, via Pilham Lane. The landscape to the east is devoid of direct road connections east to west and so settlement is sparse consisting of only a few isolated properties known as Huckerby and Willoughton Grange. The small settlement of Yawthorpe (approximately 3.5km) is located to the south-east of the Site/Sites between Corringham and Willoughton. Otherwise, the only other main area of settlement is Willoughton (approximately 6km) perched on the limestone capped scarp slope to the east. To the west, the Site/Sites are defined by Pilham Lane which connects the settlements of Blyton and Corringham. Beyond Pilham Lane, the A159 (Thonock Road) is almost true in alignment with the mainline railway before they enter Morton, which is a northern suburb of Gainsborough. The small settlement of Wharton (approximately 2.8km) is also located to the west of the Site/Sites at just over 1km to the north of Wharton Wood. Further to the west, the River Trent and its associated flood plain settlements of Walkerith and East Stockwith with the east-west lanes and associated drainage patterns are a strong feature of the landscape. To the central part of the Site/Sites, there is only one track which runs in an east west direction, and this is also a public right of way (PRoW). The track serves Glebe Farm and runs through to Pilham Lane as a narrow green lane with bordering hedgerows to each side.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change for the Cottam 3a and 3b Sites (Settlements, Industry, Commerce, and Leisure), recent trends have shown that large urban expansions can be expected on the edges of Gainsborough as an area for growth. Other proposals for development including industrial developments could increase traffic levels. The landscape to the north-east of Gainsborough is noted for its distinct absence of large-scale features. This is possibly due to the presence of Laughton Forest and other areas to the south-west that are well-wooded (Wharton Wood and Birch Wood) with the market town of Gainsborough beyond. The area is also host to the Laughton Area of Greater Landscape Value (AGLV). The impacts on the road networks that cross this area from an increase in traffic could be a major consideration.<br><br>**Overall**, the susceptibility of the Settlements, Industry, Commerce, and Leisure for the Cottam 3a and 3b Sites is potentially conditioned by the sensitivity of the villages/hamlets and that the area is relatively sparsely populated with a network of local lanes throughout the surrounding countryside. However, there is an opportunity to protect and enhance the character of these settlements to ensure that these features continue to be perceived as 'islands' of buildings and trees in the flat landscape where churches are landmarks. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects given there is scope to protect the setting of the settlements with additional tree planting and other landscape mitigation such as planting within fields | *Scenic:* The B1398 (Middle Street) runs almost parallel alignment with Ermine Street where a string of smaller settlements including Hemswell, Willoughton, Blyborough and Grayingham are perched on the higher ground providing significant interest in the scenic quality of the area. These settlements are different in character to the string of small linear settlements that line the Trent.<br><br>*Cultural:* Gainsborough which is Britain's most inland port and one of the main market towns within the area along with Newark-on-Trent and Grantham, and the cities of Nottingham and Lincoln.<br><br>*Natural:* The landscape is remote due to the poorly connected road networks. As a result, the area is defined by compact villages and dispersed farmsteads as far as the limestone capped scarp slope and this in turn helps with the protection and enhancement of the natural character of the landscape.<br><br>*Recreation and Enjoyment:* Laughton Forest is a key focus for recreation. The forest is managed by the Forestry Commission and mainly comprises Laughton Woods and Scotton Common.<br><br>*Local Distinctiveness and Sense of Place:* To the north and south of the area, the major road network is limited and connections via the minor lanes are disjointed. As a result, the landscape is devoid of large-scale landscape features and development associated with a poorly connected transport network.<br><br>*Health and Wellbeing:* The A15 (Ermine Street), follows the scarp slope in a distinctive straight alignment and connects the with city of Lincoln. The long views west towards the power stations are a key aspect of health and well-being.<br><br>*Important Spatial Function:* Smaller settlements provide an important spatial function, where they mainly comprise villages, farmsteads, and isolated residential dwellings. The course of the River Trent also exerts a spatial influence over the area, particularly where the land drains and minor roads which lead to the river corridor from the west show a marked change in the landscape.<br><br>**Overall**, the value of Settlements, Industry, Commerce, and Leisure for the Cottam 3a and 3b Sites is shaped by an area that is relatively sparsely populated with isolated residential properties and farmsteads dotted throughout the surrounding countryside. There is a series of rural settlements where their settings contribute to the character of the landscape with the closest to the Site/Sites being Blyton. | *Character:* This is shaped by the B1398 (Middle Street) runs almost parallel alignment with Ermine Street where a string of smaller settlements including Hemswell, Willoughton, Blyborough and Grayingham are perched on the higher ground providing significant interest.<br><br>*Quality:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as the Medeival village of Southorpe. The landscape surrounding these settlements retain some rural and tranquil character with farms, but minor lanes and roads are interrupted by the presence the former airfield in parts.<br><br>*Value:* Areas have a positive landscape character but include some areas of degradation where agricultural intensification has eroded landscape character, particularly around the edges of settlements.<br><br>*Capacity:* The landscape benefits from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. Smaller settlements provide an important spatial function, and their settings add to the vulnerability of the landscape to change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium to High (5km Study Area) | Medium to High (5km Study Area) | **Medium to High** | |
| Medium (Site/Sites) | Medium (Site/Sites) | **Medium** | |

| Landscape Receptor – Settlements, Industry, Commerce, and Leisure (Cottam 3a and 3b Sites) | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be predominantly screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, and some limited views from Blyton and Pilham may be possible, but this would be short term.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not affect any of the settlements or other commercial/industrial areas in this area. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. Development would not have any adverse effects on the integrity of the local settlements. | There will be very minor enhancements to leisure pursuits within the locality with a small number of PRoW being enhanced through tree and hedge planting adjacent to the Sites. The PRoW (Pilh/20/1) passing through the Cottam 3a Site will be improved new planting to generate a significant change from the open, exposed route to a more secluded location for walking.<br><br>The proposed development will have little effect on local industry and commerce although the introduction of the solar farm will provide some additional traffic to the roads and lanes locally. Mitigation will be in the form of tree, hedge, and shelterbelt planting as well as shrub and grassland areas which will both mitigate any effects on the landscape character and the views.<br><br>The settlements (particularly those of Pilham and Blyton) will not be affected due to their proximity to the Cottam 3a and 3b Site/Sites The proposed mitigation in and around the Site/Sites will also provide strong boundary vegetation that will help enhance the settlement settings where these they are in close proximity to the Cottam 3a and 3b Site/Sites. The overall increase in vegetative cover and the reduction of over intensively farmed arable land will have benefits locally both in visual terms and with regard to a considerable increase in the biodiversity around settlements and isolated dwellings in the area.<br><br>The Scheme will have no adverse effects on the larger settlements such as Gainsborough, Newark-on-Trent, Nottingham, Lincoln, and Grantham due to its distance from these locations.<br><br>There is the potential that a small number of farm buildings will be lost/reutilised due to the change in the arable production within the Site(s).<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following measures:<br><br>An enhanced hedgerow to the southwest of the Site and to the northeast of Pilham will help to screen views from this settlement. Enhanced hedgerows across the Site running north/south will break up the internal parts of the Site/Sites.<br><br>Enhancement to the Site at Cottam 3a will be through a strong belt of scattered trees to the north of Blyton | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views from the adjacent settlements and commercial/industrial units will be screened in the close to mid-range proximity due to the presence of the new hedgerows, scattered tree, and shelterbelt planting together with the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with the addition of shelterbelt and scattered tree planting around the Site with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining its overall character of the area.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>By Year 15, additional vegetated cover will have established and begun to mature, enhancing the local character area and therefore the setting of the local settlements, smallholdings, and isolated dwellings. Additional traffic will have been mitigated by improvements to roadside vegetation where possible within the Order limits. Some PRoW and recreational routes along minor roads will be enhanced through | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | and a belt of successional scrub to the western boundary to mitigate views from this direction.<br>New native hedgerow planting to the field boundaries will be introduced where appropriate and existing hedges will be allowed to grow out. Proposed and existing hedgerows to be managed at 5m. Hedgerow trees to be added to existing hedges to further screen views.<br><br>Enhancements to the overall level of tree cover will have a minor but beneficial effect on the setting of the settlements locally. Although proposed vegetation will be immature at this point it will have established, and existing planting will have been allowed to start growing out.<br><br>These settlements (as landscape receptors) are able to accommodate the development without undue adverse effects and there will be beneficial effects in terms of local tree/hedge cover and biodiversity net gains.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Settlements, Commerce and Industry:<br>- Grassland reversion around settlements<br>- A more varied landscape in terms of management and vegetation<br>- Less intensively managed land around settlement edges<br>- Potential for grazing around settlement edges<br>- General water quality improvements<br>- Soil improvements<br>- Increased woodland/vegetation cover<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Enhancement and strengthening of the Local Character Area<br><br>Adverse effects (mitigated):<br>- Panels and structures across the landscape<br>- Increased traffic through local routes and some settlements<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | additional planting creating more intimate and less exposed routes.<br><br>The local settlement and commercial/industrial facilities are able to accommodate the development without undue adverse effects on landscape character. The proposed development will have no adverse effects in the physical integrity of the settlements adjacent to the Site and there will be beneficial effects in terms of local tree/hedge cover and biodiversity net gains enhancing the local character.<br><br>**Overall**, in terms of mitigation for the Cottam 3a and 3b Sites, the landscape is sensitive due to the area being relatively sparsely populated with isolated individual residential properties and farmsteads distributed along lanes throughout the surrounding countryside. The landscape to the south of the railway line is part of the grid pattern of minor roads that is closely related to the sites of Medieval settlements across the area. To the north of the railway line the landscape is heavily influenced by the airfield, the landscape is more open and less vegetated with open field boundaries and irregular field patterns. The wide, open landscape is therefore sensitive to change. The associated settlements vary in character. Some of these settlements in more open locations such as adjacent to former airfields would benefit from hedgerow and tree planting; this could contribute a stronger sense of identity. Planting groups of deciduous trees adjacent to prominent farm buildings will also help integrate these features within the wider landscape. | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |

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| **Significance of Effect** | Negligible **Not Significant** | Minor-Moderate **Not Significant** | Minor-Moderate **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Settlements, Industry, Commerce, and Leisure (Cottam 3a and 3b Sites)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 3a and 3b Sites with the other Cumulative Sites (Cottam 1 and 2) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes to the settlements, industry, commerce and leisure due to the scope for additional vegetation enhancing the local landscape character and likewise the setting of the local settlements and their approaches, and particularly in the context of the church spires. The existing landscape character associated with the outer edges of these settlements of the Cumulative Sites and Study Area is predominantly woodland and tree cover around the margins and the change to grassland with scattered trees and a significantly improved hedgerow networks would give rise to overall benefits to landscape character in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual settlement elements or features of the landscape within Cottam 3a and 3b. The wider landscape is typified by area that is relatively sparsely populated with isolated residential properties and farmsteads dotted throughout the surrounding countryside. There is a series of rural settlements where their settings contribute to the character of the landscape to the east. This spatial function is tempered by the villages that have a broad landscape setting and the sequence of views towards churches, which is an important feature along with the other long views across the landscape and have scope for enhancement.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a Site, cumulative visibility with the Cottam 1 Site/Sites, Cottam 2 Site and Cottam 3b Site would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of intervisibility between Cottam 3a and 3b Site/Sites, extending from the:<br>• Northeast boundary of the Cottam 3a Site/Sites, defined to the west by the Green Respect Burial Park and Park House Farm, and reaching as far as Northorpe in the east<br>• East boundary of Cottam 3a Site/Sites, and stopping short of Cold Harbour Farm; and<br>• North boundary of the Cottam 3b Site/Sites, extending for a short distance as far as Grange Farm and Top Farm. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the road and local lane network with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in individual settlement elements or features of the landscape within the Cottam 3a and 3b Sites. The wider landscape is typified by area that is relatively sparsely populated with isolated residential properties and farmsteads dotted throughout the surrounding countryside. There is a series of rural settlements where their settings contribute to the character of the landscape to the east.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Sites and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a and 3b Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 3a Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 1, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 1 Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area. |

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| | Smaller settlements provide an important spatial function, where they mainly comprise villages, farmsteads, and isolated residential dwellings. The course of the River Trent also exerts a spatial influence over the area, particularly where the land drains and minor roads which lead to the river corridor from the west show a marked change in the landscape.<br><br>There are local patches of intervisibility between the Cottam 3a, 3b and Cottam 2 Sites, extending from the:<br>• South boundary of the Cottam 3b Site, bordered by Pilham to the west and the medieval settlement of Dunstall to the east, and reaching as far as Springthorpe in the south<br>• South boundary of the Cottam 3a Site, bordered by the eastern edge of Blyton to the west, reaching Grange Farm and stopping short of the mainline railway; and<br>• North boundary of the Cottam 3a Site, following the alignment of the A159 (Laughton Road) and stopping short to the west of the Green Respect Burial Park.<br><br>These areas have a positive landscape character but include some areas of degradation where agricultural intensification has eroded landscape character, particularly around the edges of settlements.<br><br>There is a local patch of intervisibility between all Sites, located to the:<br>• East of the Cottam 3b Site and north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe.<br><br>This is shaped by the B1398 (Middle Street) runs almost parallel alignment with Ermine Street where a string of smaller settlements including Hemswell, Willoughton, Blyborough and Grayingham are perched on the higher ground providing significant interest.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape and Settlements, Industry, Commerce and Leisure*<br>Overall, the character of the landscape and settlements, industry, commerce, and leisure is shaped by from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. Smaller settlements provide an important spatial function, in providing enclosure in the landscape. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3a and 3b Sites would not alter the character of the landscape and its land use features. Moreover, these features are often set within a well-vegetated context and the associated built form plays a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is very low and very for the Cumulative Sites because there are minor patches of small cumulative change to a limited | **Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 1 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.<br><br>The wider landscape is typified by area that is relatively sparsely populated with isolated residential properties and farmsteads dotted throughout the surrounding countryside. There is a series of rural settlements where their settings contribute to the character of the landscape to the east. This spatial function is tempered by the villages that have a broad landscape setting and the sequence of views towards churches, which is an important feature along with the other long views across the landscape and have scope for enhancement.<br><br>*Overall Character of the Landscape and Settlements, Industry, Commerce and Leisure*<br>Overall, the character of the landscape and settlements, industry, commerce, and leisure are shaped by from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. Smaller settlements provide an important spatial function, in providing enclosure in the landscape. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3a and 3b Sites would not alter the character of the landscape and its land use features. Moreover, these features are often set within a well-vegetated context and the associated built form plays a positive role in reducing the overall cumulative effects. |

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| | area of medium sensitivity, affecting some characteristics without altering the overall impression of its character. | |
| **Magnitude** | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1) **with only** Embedded Mitigation: Very Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Negligible **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

| Landscape Receptor – Public Rights of Way and Access (Cottam 1 Site/Sites) |
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**Receptor Baseline:**
Within the Cottam 1 Site/Sites to Cottam 2 Site, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**.
The Site/Sites within Cottam 1 (2km Study Area) can be sub-divided into two distinct land areas:

- Cottam 1 North
- Cottam 1 South

**Key Features:**
The Public Rights of Way (PRoW) and Access network is broadly defined to the north by the open arable and pastoral farmland to the east of the villages of Stow, Normanby by Stow, Willingham by Stow, Kexby and Upton. This landscape supports larger field systems that are regular and geometric as a result the PRoW network follows a similar pattern, some of which are crossed by ditches and dykes. In contrast, there are smaller scale field systems to the west of Stow Road and Normanby Road where the landscape is more pastoral with thickly hedged fields, and the footpath network is more intimate and informal with shorter routes that lead in several directions. Small tributaries of the River Till form crossing points at the junction with the local lanes and these are often the only access points to the river corridor for enjoyment and recreation. There are fewer watercourses and PRoW to the east of the area around Glentworth, Fillingham and Ingham as this is where the landscape becomes more elevated towards the distinct Jurassic Limestone Scarp. Finally, to the south, the footpath network is mainly restricted to north-south routes that generally follow the pattern of watercourses, tracks, and woodlands across the area. The PRoW network is mainly aligned along field boundaries connecting with the local road network and to nearby settlements and farmsteads across the area. The network is generally intermittent because there are few landscape features to help form continuous links. The footpath network is particularly sporadic in the landscape to the west of the Site/Sites and due to these inconsistent links, the local lanes are used to supplement for recreation and the lack of connectivity. The routes mainly follow an east-west and north-south direction to reflect the prevailing landscape pattern and to connect the local lanes with nearby settlements. These footpaths can be divided into the following four clusters across the landscape:

To the north-west around Willingham by Stow, there are several footpaths within the settlement, which comprise Wlgm/59/1, Wlgm/59/3, Wlgm/59/5, Wlgm/62/1, Wlgm/63/1, Wlgm/64/1, Wlgm/515/1, Wlgm/538/1, Wlgm/881/1, and Wlgm/976/1. The majority of these footpaths are within the built part of the settlement apart from Wlgm/59/1, which takes a route north to join with the nearby settlement of Kexby.

To the north-east, around Fillingham, the majority of routes are bridleways to the north and west of the settlement, which comprise, Ingh/24/1, Fill 86/1, Fill 85/2, Fill/767/1, Fill/85/1, Fill/88/1, Gltw/88/1. There are also footpaths, which comprise Gltw/90/2, Gltw/90/3 within Glentworth.

To the south-west around Stow there are a number of footpaths which are mainly within the built part of the settlement, which comprise, Brox/196/1, Scmp/32/1, Scmp/196/1, Stur71/1, Stur/71/2, Stur/71/3, Stur/71/4, Stur/72/1, Stur/74/2, Stur/75/1, Stur76/1, Stur/77/2, Stur/79/2, Stur/80/1, Stur/82/1, TLFe/32/1, and there are also bridleways which comprise Camm/28/1, Camm/31/1, Stow/70/1, TFLe/31/1 and TLFe/31/2.

To the south-east around Igham and Brattleby there are a number of footpaths around Ingham that comprise, Brtl/33/1, Fill/87/1, Ingh/17/1, Ingh/17/2, Ingh/18/1, Ingh/18/2, Ingh/20/1, Ingh/20/2, Ingh/20/3, Ingh/21/1, Ingh/21/2, Ingh/21/3, Ingh/22/1, Ingh/25/1, Ingh/26/1, Ingh/26/3, Ingh/27/1, Ingh/27/2, Ingh/27/3, Ingh/27/4, Ingh/27/5, Ingh/238/1 and Stow/83/1.

There are several footpaths that pass directly within, adjacent to, or very close proximity to boundary of the Site/Sites and these include:

Cottam North:
Bridleway (Fill/85/1) which passes in a north-south direction linking Kexby Road to Willingham Road and bridleway (Fill/767/1) which joins with this bridleway to form a right-angled bend and then continues in an easterly direction (Fill/85/2) before heading south to meet with Willingham Road. Bridleway (Fill/86/1) that takes a north-south route from Willingham Road close to Glebe Farm, before heading southwest along a 600m stretch of Short Lane stopping in Ingham at the junction with the main route within the village known as West End. Footpath (Ingh/26/3) which then takes and east-west route (Stow/83/1) towards and through the small settlement of Coates to join with Ingham Road at Squire's Bridge.

Cottam South:
Bridleway (Camm/31/1 that takes a route from Ingham Road at Furze Hill then making at a dogleg turn to the west of the woodland at Brattleby Thorns and heading south (TLFe/31/2) to join Thorpe Lane at Thorpe le Fallows. A further bridleway (TLFe/31/1) that takes a north-south route from Thorpe Lane at Thorpe le Fallows and then (Scmp/31/1) to join the A1500 (Tillbridge Lane) in the south at Till Bridge Farm. Footpath (TLFe/32/1) that takes a north-south informal route along the eastern bank of the River Till at Thorpe Bridge then (Scmp/32/1) connecting with the A1500 at Till Bridge Farm. Footpath (Stur/73/1) that takes an east-west route connecting the settlement of Sturton by Stow in the west with Fleet Lane in the east.
(Stow/83/1) that runs through the Cottam 1 North site. It cuts across the development horizontally and offers views to both north and south parcels. There is a PRoW bridleway that connects Willingham Road to Ingham through Arable land. This PRoW (Fill/86/1) runs along a small section of the eastern boundary of the Cottam 1 North parcel. Another PRoW bridleway that runs through the middle of Cottam 1 South Site is TLFE/31/2. This PRoW runs through the site in a vertical direction and connects Thorpe Lane to Ingham Road. In addition to this there are multiple Prow footpaths that run up to the boundary of the Cottam sites.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change for the Cottam 1 Site/Sites (Public Rights of Way and Access), recent trends have shown that the landscape has a strong rural character, but tranquility levels are being disturbed by development pressures from the larger scale settlements and major routes across the area. Tranquility is however associated with the winding lanes and landscape-scale projects such as the Trent Vale Landscape Partnership which can help by offering increased recreational and educational opportunities within these areas.<br><br>**Overall**, the susceptibility of the Public Rights of Way and Access for the Cottam 1Site/Sites is conditioned by the limited network of footpaths and bridleways and the availability of the rural roads and minor tracks for extended access. The relevant characteristics therefore have some scope to accommodate change without undue adverse effects. There is however scope to increase recreation opportunities including where there are natural features and historical elements to draw interest from residents and tourists. | *Scenic:* The network of footpaths and bridleways offer a sequence of views to landmark churches, particularly along the B1241.<br><br>*Cultural:* Some of the villages have a broad landscape setting where the minor roads lead across this area as access for recreation, particularly as a landscape with long views.<br><br>*Natural:* The management of hedgerows (and hedgerow trees) on the margins of villages and lining footpaths and bridleways will help retain the characteristic sense of enclosure and contrast with open areas.<br><br>*Recreation and Enjoyment:* Recreation is provided by the numerous local lanes and public rights of way, especially along the Trent corridor, including the Trent Valley Way.<br><br>*Local Distinctiveness and Sense of Place:* Some views from the footpaths and bridleways offer long westward views to the power stations on the River Trent, and eastward views to the scarp face of Lincoln 'Cliff'.<br><br>*Health and Wellbeing:* The landscape feels exposed in parts, but the combination of the bends in the local lanes and small blocks of woodlands provide a stronger sense of enclosure. This landscape pattern is important in invigorating the senses of well-being and matters of health.<br><br>*Important Spatial Function:* Roads and minor farm tracks are bordered by wide verges and hedgerows, and this contributes to their function in providing an open setting to villages. Access for recreation is an important factor in these locations.<br><br>**Overall**, the value of Public Rights of Way and Access for the Cottam 1 Site/Sites is shaped by the network of footpaths and bridleways that offer a sequence of views to landmark churches, particularly along the B1241. Some views from the footpaths also offer westward views to the power stations on the Trent, and eastward views to the scarp face of Lincoln 'Cliff'. | *Character:* The interruptions at bridge crossings are a significant component of the landscape that provide local points of interest at crossings with PRoW.<br><br>*Quality:* Some of the villages have a broad landscape setting where the minor roads lead across this area as access for recreation, particularly as a landscape with long views and this is a substitute for the sparse network of PRoW.<br><br>*Value:* Wide panoramic views are possible from the low hills and ridges that form watersheds between watercourses. Where PRoW occur in these locations their value is enhanced.<br><br>*Capacity:* The landscape has some vulnerability to unsympathetic development. The footpaths and bridleways are key features especially where they offer a sequence of views to landmark churches, particularly along the B1241. Some views from the footpaths also offer westward views to the power stations on the Trent, and eastward views to the scarp face of Lincoln 'Cliff'. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set back 15m from PRoW.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| High (5km Study Area) | High (5km Study Area) | **High** | |

| | | | |
|---|---|---|---|
| High to Medium (Site/Sites) | High to Medium (Site/Sites) | **High to Medium** | |

| **Visual Receptor – Public Rights of Way and Access (Cottam 1 Site/Sites)** | |
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| **Visual Effects** | The visual effects for the Public Right of Way (PRoW) Receptors are set out within the Individual PRoW Receptor Sheets at **Appendix 8.3.5.2 [C6.3.8.3.5.2]** and **Appendix 8.3.5.3 [C6.3.8.3.5.3].** |

| **Landscape Receptor – Public Rights of Way and Access (Cottam 1 Site/Sites)** | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be predominantly screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but this would be short term.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not affect any of the landscape receptors in this area. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. Although there would be an alteration to the views and setting of PRoW Fill/86/1, Fill/767/1, Stow/83/1, TLFe/31/2, and Camm/31/1, in terms of these features as a landscape receptor, their overall quality would be enhanced in the medium to long term and construction generally would have no adverse effects on the integrity of the landscape character of these routes. | PRoW Fill/86/1: Lies to eastern boundary of the Cottam 1 North Site adjacent to Fields C29 and C30 running in a broadly north/south direction and joining the Willingham Road adjacent to the Site. This PRoW is a bridleway. A new hedgerow with irregularly spaced hedgerow trees is proposed adjacent to this route creating a minimum 10m wide grassed lane with a tall herb grassland mix to create a pleasant and interesting route.<br><br>PRoW Stow/83/1: Lies to the north of field C26 at the south of the Cottam 1 North Site and is a footpath that runs through the Site adjacent to an area proposed for bird mitigation. Passing through the Site boundary, this route has an existing hedgerow to the north, but this is to be augmented by a shelterbelt between the PRoW and the panelled area to the north providing both visual mitigation and additional biodiversity gains and varying the character of the route as it passes west towards the Stow.<br><br>PRoW Fill/767/1: Lies adjacent to the Cottam 1 North Site/Sites and is a bridleway. It does not run through the Site/Sites but passes at right angles adjacent to the boundary. This boundary has an existing hedgerow, and this is to be augmented with intermittent tree cover to the side of the route and this will curtail visibility and enhance landscape character by improving the level of enclosure at this location.<br><br>PRoW TLFe/31/2: The only PRoW going through the Site at the Cottam 1 South Site that joins with Camm/31/1, a bridleway that runs broadly north south from the Inham Road to Thorpe Le Fallows. This route, running through The Grange, will be enhanced to provide a new hedgerow to the east of the route north and south of The Grange and an enhanced hedgerow to its western boundary south of this property. To the east of field D16, a block of scattered trees is to be provided and this will also enhance the PRoW, making this part of the route varied and interesting, A tussock grassland mix around this bridleway will maintain the biodiversity of this route. | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views from the adjacent PRoW will be screened in the close to mid-range proximity through the new hedgerows, scattered tree, and shelterbelt planting together with the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with the addition of shelterbelt and scattered tree planting around the Site with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining its overall character of the area.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | The remainder of the PRoW locally are outside the Order Limits and no further mitigation is proposed to improve their routes, however, boundary hedgerow enhancement, new hedgerows and the addition of hedgerow trees and shelterbelts around the Cottam 3a and 3b Site/Sites will help to integrate the development into the surrounding countryside and mitigate any views from these local routes.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following measures:<br><br>New native hedgerow planting to the field boundaries will be introduced generally as appropriate and existing hedges will be allowed to grow out. Proposed and existing hedgerows to be managed at 5m. Hedgerow trees to be added to existing hedges to further screen views.<br><br>Enhancements to the overall level of tree cover will have a minor-moderate but neutral effect on the setting of the PRoW locally, and although proposed vegetation will be immature at this point it will have established, and existing planting will have been allowed to start growing out.<br><br>These PRoW landscape receptors are able to accommodate the development without undue adverse effects and there will be beneficial effects in terms of local tree/hedge cover and biodiversity net gains.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of PRoW:<br>- Grassland reversion around PRoW<br>- Improvements to a small number of valuable PRoW<br>- A more varied landscape setting to the PRoW<br>- Improved management of exiting vegetation with less intensively managed land around PRoW<br>- Increased visibility/definition of watercourses across the landscape.<br>- Increased woodland/vegetation cover<br>- Increased riparian species vegetation<br>- Improved biodiversity around enhanced PRoW<br>- Improved user experience – less exposed where PRoW and adjacent boundaries are enhanced<br>- No adverse effects on the wider PRoW network with some benefit in terms of increased vegetation across the landscape setting<br><br>Adverse effects (mitigated): | PRoW Fill/86/1: The hedgerow trees will screen views of the Site for horse riders using PRoW Fil/86/1 and by Year 15, the hedge will have established to an approximate height of 3.5m mitigating views. The creation of a strong hedge and permanent grassland will provide additional biodiversity benefits.<br><br>PRoW Stow/83/1: The shelterbelt planting adjacent to footpath will have established and reached a height of some 3.5m by Year 15 and will obscure views towards the panel areas.<br><br>PRoW Fill/767/1: The hedgerow trees will screen views of the Site for horse riders using PRoW and by Year 15, the hedge will have established to an approximate height of 3.5m mitigating views. The creation of permanent grassland will also provide additional biodiversity benefits.<br><br>PRoW TLFe/31/2 and Camm/31/1: New hedgerows with hedgerow trees will have established and reached a height of some 3.5m with hedgerow trees reaching some 7.5 and helping to obscure views towards the panel areas from the bridleway.<br><br>The local PRoW network is able to accommodate the development without undue adverse effects. The proposed Scheme will have no adverse effects in the physical integrity of the PRoW within the Cottam 1 Site/Sites and there will be neutral effects in terms of local tree/hedge cover and biodiversity net gains enhancing the local character.<br><br>Overall, in terms of mitigation for the Cottam 1 Site/Sites, due to the limited network of public rights of way (PRoW) across the area the aim is to enhance the connectivity to the river corridors and their flood plains for their recreational importance. The Trent is the main river providing a valuable link and The Trent Valley Way in particular, provides a notable long-distance route. The other notable river is the upper parts of the Witham of which the River Till is a tributary. The aims are also to extend the non-road network, especially where it can link people to both woodlands and river corridors. | |

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| | | - Panels and structures across the landscape but set away from PRoW.<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor-Moderate **Not Significant** | Minor-Moderate **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor-Moderate **Not Significant** | Minor-Moderate **Not Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Public Rights of Way and Access (Cottam 1 Site/Sites)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 1 Site with the other Cumulative Sites (Cottam 2, 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes to the PRoW due to the scope for additional vegetation enhancing the local landscape character. The existing landscape character associated with these PRoW of the Cumulative Sites and Study Area would predominantly provide tree cover along their margins with a change to grassland with scattered trees and a significantly improved hedgerow networks, which would give rise to overall benefits to landscape character in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the Public Rights of Way (PRoW) and Access features within Cottam 1. The landscape is shaped by the network of footpaths and bridleways that offer a sequence of views to landmark churches, particularly along the B1241. Some views from the footpaths also offer westward views to the power stations on the Trent, and eastward views to the scarp face of Lincoln 'Cliff'.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation areas and Cable Route Corridor extending between the Cottam Power Station and the Cottam 1 Site/Sites and extending between the Cottam 1 Site/Sites and the Cottam 2 Site (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.1 [C6.4.8.15.1.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the Cable Route Corridor, Cottam 2, and Cottam 3a and 3b Sites and the Cable Route Corridor s would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these cumulative sites and the Cable Route Corridors. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the road and local lane network with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the Public Rights of Way (PRoW) and Access features within Cottam 1. The landscape is shaped by the network of footpaths and bridleways that offer a sequence of views to landmark churches, particularly along the B1241. Some views from the footpaths also offer westward views to the power stations on the Trent, and eastward views to the scarp face of Lincoln 'Cliff'.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation areas and Cable Route Corridor extending between the Cottam Power Station and the Cottam 1 Site/Sites and extending between the Cottam 1 Site/Sites and Cottam 2 Site (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility. |

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| | There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites and Cottam 2 Site, located to the:<br><br>• east of Upton and to the south of Sturgate Airfield<br>• south of Kexby in the locality of Valley Farm<br>• east of Willingham by Stow in the locality of the residential property known as Carisbrooke<br>• east of Stow, just to the east of the property known as Tam Howes; and<br>• west of Sturton by Stow, extending from West Syke Lane as far as Normanby by Stow.<br><br>The PRoW within these areas are generally focused around the settlements where their edges support a strong hedgerow network with a good level of tree and small woodlands, which helps in curtailing visibility from these routes. There are PRoW that extend from Willingham by Stow, linking with the settlements of Kexby, Upton, Heapham and Sturgate, which pass across well-treed landscapes. There is also a link west towards Gainsborough from Upton passing across a landscape that supports numerous small woodlands including Thurlby Wood, Lea Wood and Bass Wood. There is a particular concentration of cumulative visibility to the northeast of Willingham by Stow and Kexby, but the local concentration of woodlands comprising Top Wood, Heaton's Wood, and Big Wood help to curtail visibility in this area.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2, and Cottam 3a Sites, located to the:<br>• northeast of Sturton by Stow, extending between Tillbridge Road and Ingham Road.<br><br>The PRoW (Stow/83/1) in this location follows the edge of the settlement, but there are woodlands in the outlying landscape between Fleet's Lane and the edge of the settlement that help curtail some visibility. There are also local undulations in landform found to each side of the River Till that adds layering to this location along with the riparian vegetation along the watercourse, which also helps break down visibility in this area.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2, and Cottam 3b Sites, located to the:<br>• northeast of Sturton by Stow, extending between School Lane Farm and Ingham Road.<br><br>The PRoW (Stow/83/1) in this location follows the edge of the settlement, but there are woodlands in the outlying landscape between Fleet's Lane and the edge of the settlement that help curtail some visibility. There are also local undulations in landform found to each side of the River Till that adds layering to this location along with the riparian vegetation along the watercourse, which also helps break down visibility in this area.<br><br>There are local patches of intervisibility between All Sites comprising the landscape to the:<br>• east boundary of the Cottam 1 North Site/Sites, extending from Glentworth in the north as far as Ingham in the south.<br><br>The PRoW within these areas are focused on the settlement pattern to the east that includes Ingham, Cammeringham and Brattleby. The PRoW generally follow the ridgeline where built form and woodland help curtail any visibility. Woodland is mainly concentrated to the west of Cammeringham and Brattleby and includes geometric shaped shelterbelts and woodland plantations consisting of predominantly native species with large poplar specimens in shelterbelts, which help break up the landscape. Some PRoW extend west from the ridgeline into the Till Vale such as between Ingham and Fillingham where there is a high concentration of local woodlands to help curtail visibility. These woodlands include Coates Gorse, Fox Covert and New Plantation.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]** | There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cotton 1 Site/Sites and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 1, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 1 Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 1 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow**.**<br><br>The landscape is shaped by the network of footpaths and bridleways that offer a sequence of views to landmark churches, particularly along the B1241. Some views from the footpaths also offer westward views to the power stations on the Trent, and eastward views to the scarp face of Lincoln 'Cliff'. This sequence of views within a landscape setting is tempered by the minor roads lead across this area as access for recreation, particularly where the PRoW network is limited. Besides. the PRoW network is often confined to the settlement edges where the woodland and tree cover closes down views of this broad landscape setting. These relevant characteristics of the landscape have some ability to accommodate change with key beneficial effects and there is scope to bring forward improvements as part of the PRoW network.<br><br>*Overall Character of the Landscape and Public Rights of Way and Access*<br>Overall, the character of the landscape and the Public Rights of Way and Access is shaped by the villages and isolated settlement that have a broad landscape setting where the minor roads lead across this area as access for recreation, particularly as a landscape with long views. The PRoW network is often confined to the settlement edges where the woodland and tree cover closes down views of this broad landscape setting. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape and its PRoW and Access features. Moreover, these features are often set within a well-vegetated context or associated with built form that plays a positive role in reducing the overall cumulative effects. |

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| | **Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape and Public Rights of Way and Access*<br>Overall, the character of the landscape and the Public Rights of Way and Access is shaped by the villages and isolated settlement that have a broad landscape setting where the minor roads lead across this area as access for recreation, particularly as a landscape with long views. The PRoW network is often confined to the settlement edges where the woodland and tree cover closes down views of this broad landscape setting. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape and its PRoW and Access features. Moreover, these features are often set within a well-vegetated context or associated with built form that plays a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is low and very low for the Cumulative Sites because there would be a small-scale alteration of the aesthetic and perceptual aspects of the landscape such as the removal of existing components and the addition of new ones. | |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

**Landscape Receptor – Public Rights of Way and Access (Cottam 2 Site)**

**Receptor Baseline:**
Within the Cottam 2 to Cottam 3a and 3b Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**.

The landscape is characterized by the dynamic broad valley of the River Trent which is bordered by large urban areas including the cities of Nottingham and Lincoln connected by a strategic road network in a mostly north south direction. There are also scattered rural settlements perched on the edge of the floodplain that are linked by a smaller network of minor roads and local lanes which generally follow an east west alignment.

**Key Features:**
The Public Rights of Way (PRoW) and Access network is broadly defined to the north by the open arable and pastoral farmland to the east of the villages of Blyton and Laughton. This landscape supports medium to large field systems that are irregular in parts but used for intensive agriculture, as a result the PRoW is limited. In contrast, there are smaller scale field systems to the west of Stow Road and Normanby Road where the landscape is more pastoral with thickly hedged fields, and the footpath network gives better access around the villages with shorter routes that lead in several directions. Small tributaries of the River Till and the River Trent including Corringham Beck form crossing points at the junction with the local lanes and these are often the only access points to the watercourses for enjoyment and recreation. There are fewer watercourses and PRoW to the east of the area around Willoughton and Hemswell as this is where the landscape becomes more elevated towards the distinct Jurassic Limestone Scarp. Finally, to the south, the footpath network is mainly restricted to the settlements of Upton, Sturgate and Kexby.

The PRoW network is mainly aligned along field boundaries connecting with the local road network and to nearby settlements and farmsteads across the area. The network is generally intermittent because there are few landscape features to help form continuous links. The footpath network is particularly sporadic in the landscape to the west of the Site/Sites and due to these inconsistent links, the local lanes are used to supplement for recreation and the lack of connectivity. The routes mainly follow a north-south direction to reflect the prevailing landscape pattern and to connect the local lanes with nearby settlements. These footpaths can be divided into the following five clusters across the landscape:

To then central parts, around Corringham, there are two footpaths that takes routes from the built area of the settlement. The footpath (Corr/22/1) takes a north-south route leading from East Lane along Church Lane then leaving the settlement to the west of properties known as The Old Hall and Hall Farm and then joining with Pilham Lane at Moscar Farm and Aisby House Farm. The footpath (Corr/23/1) takes a short route to the south-west of the village from Polar Lane to meet with The Street close to The Old Chapel.

To the north-east around Grayingham and Blyborough there are no footpaths or bridleways.

To the south-west around Gainsborough, there are no footpaths or bridleways.

To the southeast around Yawthorpe, there are no footpaths or bridleways.

To the north-west, around Blyton and Pilham there is one footpath (Pilh/20/1) which takes and east-west route from Pilham Lane passing Glebe Farm and then continuing as a green lane with hedgerows to both sides before joining Pilham Lane to the south of Blyton Level Crossing.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
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| In terms of forces for change for the Cottam 2 Site (Public Rights of Way and Access), recent trends have shown that the landscape has a strong rural character, but tranquility levels are being disturbed by development pressures from the larger scale settlements and major routes across the area. Tranquility is however associated with the winding lanes and landscape-scale projects such as the Trent Vale Landscape Partnership can help by offering increased recreational and educational opportunities within these areas.<br><br>**Overall**, the susceptibility of the Public Rights of Way and Access for the Cottam 2 Site is conditioned by the limited network of footpaths and bridleways and the availability of the rural roads and minor tracks for extended access. The relevant characteristics therefore have some scope to accommodate change without undue adverse effects. There is however scope to increase recreation opportunities including where there are natural features and historical elements to draw interest from residents and tourists. | *Scenic:* The small villages have distinctive landscape elements which contribute to the special identity of the surrounding landscape and its value to the PRoW and network. This includes their approaches and well-integrated edges.<br><br>*Cultural:* The sequence of views to landmark churches are a key feature, especially the Corringham Grade I St Lawrence Church with its distinctive buttressed square tower.<br><br>*Natural:* The landscape feels exposed in parts, but the combination of the bends in the local lanes and small blocks of woodlands provide a stronger sense of enclosure. The woodlands within this landscape pattern are important as natural features.<br><br>*Recreation and Enjoyment:* This landscape is important as an invigorating backdrop for recreation and enjoyment.<br><br>*Local Distinctiveness and Sense of Place:* Roads and minor farm tracks are bordered by wide verges and hedgerows, and this contributes to local distinctiveness and sense of place.<br><br>*Health and Wellbeing:* The tranquility associated with the winding lanes is important for health and well-being.<br><br>*Important Spatial Function:* The local roads offer long westward views to the power stations on the River Trent, and eastward views to the scarp face of Lincoln 'Cliff', particularly along the A631.<br><br>**Overall**, the value of Public Rights of Way and Access for the Cottam 2 Site is shaped by the limited network of footpaths and bridleways giving rise to the importance of the local lanes and tracks for recreation. The sequence of views across the area towards village churches and approaches to settlements are sensitive features. The close proximity to two AGLVs (comprising AGLV1 The Ridge to the east and AGLV2 Gainsborough to the west) help shape the attractiveness of the landscape and raise its overall value. | *Character:* The interruptions at the bridge crossing provide local points of interest where they intersect with the PRoW.<br><br>*Quality:* The woodlands within the landscape pattern are important as natural features in providing enclosure and intimacy especially where they occur in context with the PRoW.<br><br>*Value:* The tranquility associated with the winding lanes is important for health and well-being, and where they connect with the PRoW this is important to their value.<br><br>*Capacity:* The most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges. Consequently, an increase in field size which borders PRoW affects the capacity of the landscape to absorb change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set back 15m from PRoW.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| High (5km Study Area) | High (5km Study Area) | **High** | Not Applicable |
| Medium (Site/Sites) | High to Medium (Site/Sites) | **High to Medium** | Not Applicable |

| **Visual Receptor – Public Rights of Way and Access (Cottam 2 Site)** | |
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| **Visual Effects** | The visual effects for the Public Right of Way (PRoW) Receptors are set out within the Individual PRoW Receptor Sheets at **Appendix 8.3.5.2 [C6.3.8.3.5.2]** and **Appendix 8.3.5.3 [C6.3.8.3.5.3].** |

| **Landscape Receptor – Public Rights of Way and Access (Cottam 2 Site)** | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be predominantly screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would not affect the PRoW to any degree and would be short term.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not affect any of the landscape receptors in this area. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. There would not be a fundamental change to the surroundings to the views and settings of these landscape receptors. | There are no Public Rights of Way within the Cottam 2 Site. The closest PRoW (Corr/22/1) lies to the west of Hall Farm, Old Hall and Corringham village running north/south.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following measures:<br><br>Shelterbelts, new hedgerows, and a belt of scattered trees are all proposed to the northwestern and western boundaries of the Cottam 2 Site/Sites. These measures will screen views from the ProW. The PRoW is not within the Order limits and no further mitigation is therefore proposed to improve this route.<br><br>To the north of the Cottam 2 Site, within the Cottam 3b Site, Pilh/20/1 (footpath) has no particular association with the Cottam 2 Site but will be enhanced as part of the Cottam 3b Site mitigation, creating an enclosed walkway with limited views out to the south towards the Site.<br><br>New native hedgerow planting will be introduced to the field boundaries as appropriate and existing hedgerows will be allowed to grow out. Proposed and existing hedgerows to be managed at 5m. Hedgerow trees to be added to existing hedges to further screen views.<br><br>Enhancements to the overall level of tree cover will have a minor but beneficial effect on the setting of the PRoW locally, and although proposed vegetation will be immature at this point it will have established, and existing planting will have been allowed to start growing out.<br><br>The cultural heritage of the farmed landscape will be retained around these local PRoW with the proposals will create a more varied mix of land use and significantly enhanced grassland areas in line with a more historic field pattern.<br><br>The cultural heritage of the farmed landscape surrounding the settlement of Corringham will be retained and enhanced. The mitigation proposals for the PRoW network within the Order limits will bring forward a more varied mix of land use and significantly | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north and west of the Site will be screened in the mid-range proximity due to the introduction of the new hedgerows, scattered tree and shelterbelt planting together with the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with the addition of shelterbelt and scattered tree planting around the Site with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining its overall character of the area.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>By Year 15, the shelterbelt and enhanced hedgerows will have fully established and will have begun to mature. Existing hedges will have reached a height of some 3.5m whilst the shelterbelt planting and hedgerow trees will be some 7.5m high screening any | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | enhanced grassland areas that will aim to reinforce the historic field pattern in this farmed landscape, where applicable.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of PRoW:<br>- Grassland reversion around PRoW<br>- Improvements to a small number of valuable PRoW<br>- A more varied landscape setting to the PRoW<br>- Improved management of exiting vegetation with less intensively managed land around PRoW<br>- Increased visibility/definition of watercourses across the landscape.<br>- Increased woodland/vegetation cover<br>- Increased riparian species vegetation<br>- Improved biodiversity around enhanced PRoW<br>- Improved user experience – less exposed where PRoW and adjacent boundaries are enhanced<br>- No adverse effects on the wider PRoW network with some benefit in terms of increased vegetation across the landscape setting<br><br>Adverse effects (mitigated):<br>- Panels and structures across the landscape but set away from PRoW.<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | potential views into the Cottam 2 Site from both the south and the west. Views from the east will be screened by the scattered tree planting bordering Yawthorpe Beck, which will have reached a height of 7.5m.<br><br>The local PRoW network is able to accommodate the development without undue adverse effects. The proposed development will have no adverse effects in the physical integrity of the PRoW within the Cottam 2 Site/Sites and there will be beneficial effects in terms of improvement to local tree/hedge cover and biodiversity net gains to benefit the local character. Overall, in terms of mitigation for the Cottam 2 Site, due to the limited network of public rights of way (PRoW) across the area the aim is to enhance the connectivity to the wider landscape including the river corridors and their flood plains for their recreational importance. The Trent is the main river providing a valuable link and The Trent Valley Way in particular, provides a notable long-distance route. The other notable river is the upper parts of the Witham of which the River Till is a tributary. The aims are also to extend the non-road network, especially where it can link people to both woodlands and these river corridors. | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor-Moderate **Not Significant** | Minor-Moderate **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor-Moderate **Not Significant** | Minor-Moderate **Not Significant** | Negligible **Not Significant** |

| Landscape Receptor – Public Rights of Way and Access (Cottam 2 Site) | | |
|---|---|---|
| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 2 Site with the other Cumulative Sites (Cottam 1 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes to the PRoW due to the scope for additional vegetation enhancing the local landscape character. The existing landscape character associated with these PRoW of the Cumulative Sites and Study Area would predominantly provide tree cover along their margins with a change to grassland with scattered trees and a significantly improved hedgerow networks, which would give rise to overall benefits to landscape character in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the PRoW and Access features of the landscape within Cottam 2. The wider landscape is typified by arable fields, hedgerows, and watercourses where there is a limited network of footpaths and bridleways and the availability of the rural roads and minor tracks for extended access is also limited.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.2 [C6.4.8.15.1.2]** which shows that with the Cottam 2 Site, cumulative visibility with the Cottam 1 Site/Sites and the Cottam 3a and 3b Sites would not be experienced across the entirety of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of intervisibility between the Cottam 2 Site and with the Cottam 3a and 3b Sites extending from the:<br>• South boundary of the Cottam 2 Site, starting at the eastern edge of Corringham and reaching as far as Yawthorpe Beck and Yawthorpe<br>• West boundary of the Cottam 2 Site, extending as far as Pilham Lane<br>• East boundary of the Cottam 2 Site, extending as far Yawthorpe and Yawthorpe Fox Covert<br>• Northwest boundary of the Cottam 2 Site, extending as far as the Cottam 3a and 3b Sites.<br><br>The study area supports only two PRoW, comprising public footpath (Pilh/20/1) that is located where visibility of the Cottam 2 Site is experienced with the Cottam 3a and 3b Sites, but this intervisibility is closed down by the vegetation bordering the mainline railway and tree cover and woodland associated with Top Farm and Grange Farm. With public footpath (Corr/22/1) there is no intervisibility between any of the Site/Sites along this PRoW.<br><br>There is a local patch of intervisibility between the Cottam 2 Site and with the Cottam 3b Site, comprising the:<br>• Northern-most tip of the Cottam 2 Site extending across the medieval village of Dunstall as far as the medieval village of Southorpe; and<br>• Southeast of the River Eau, extending as far as Huckerby Farm and Huckerby Bungalows.<br><br>There are small roads forming part of the local road network running in a predominantly east west and north south direction across the landscape that are within the immediate context of the PRoW within the study area. To the north/northwest, Green Lane runs in an east west direction and then changes direction at the right-angled bend to meet with Pilham Lane and then Bonsdale Lane. The changes of | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the road and local lane network with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the PRoW and Access features of the landscape within the Cottam 2 Site. The wider landscape is typified by arable fields, hedgerows, and watercourses where there is a limited network of footpaths and bridleways and the availability of the rural roads and minor tracks for extended access is also limited.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.2 [C6.4.8.15.2.2]** which shows that with the Cottam 2 Site, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 2 Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 2, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 2 Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 2 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.<br><br>The landscape is shaped by the network of footpaths and bridleways that offer a sequence of views to landmark churches, particularly along the B1241. Some views from the footpaths also offer westward views to the power stations on the Trent, and eastward views to the scarp face of Lincoln 'Cliff'. This sequence of views within a landscape setting is tempered by the minor roads lead across this area as access for recreation, particularly where the PRoW network is limited. Besides. the PRoW network is often confined to the settlement edges where the woodland and tree cover closes |

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| | direction in the road network provide more intimacy and interest in views across the area, add intimacy at the junctions and close down views across the landscape.<br><br>There are local patches of intervisibility between All Sites comprising the:<br>• North of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe<br>• West of the settlement of Corringham, extending from Staplegate House as far Windy Ridge on Pilham Lane<br>• West of Springthorpe, extending across the landscape as far as Harpswell Low Farm; and<br>• East of Yawthorpe, extending as far as Hemswell.<br><br>Public footpath (Pilh/20/1) is located within the patch of intervisibility that is located to the north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe. At this location there would be no intervisibility between the Cottam 3a and 3b Sites due to the intervening vegetation bordering the mainline railway. Any intervisibility between the Cottam 3a and 3b Sites and Cottam 1 Site/Sites and Cottam 2 Site would be curtailed by distance and intervening settlement and vegetation.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape and PRoW and Access*<br>Overall, the character of the landscape and the PRoW and Access is shaped by the sparse network of footpaths and bridleways. There is however a good network of local roads and minor farm tracks for recreation that are bordered by wide verges and hedgerows, which contribute to local distinctiveness and sense of place. The vegetation bordering these routes helps to close down the cumulative visibility across the area, since the road network runs in both a north south and east west direction. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its PRoW and Access features. Moreover, there are only two PRoW, and these are set within a well-vegetated context or associated with built form that plays a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is low and very low for the Cumulative Sites because there would be a small-scale alteration of the aesthetic and perceptual aspects of the landscape such as the removal of existing components and the addition of new ones. | down views of this broad landscape setting. These relevant characteristics of the landscape have some ability to accommodate change with key beneficial effects and there is scope to bring forward improvements as part of the PRoW network.<br><br>*Overall Character of the Landscape and PRoW and Access*<br>Overall, the character of the landscape and the PRoW and Access is shaped by the sparse network of footpaths and bridleways. There is however a good network of local roads and minor farm tracks for recreation that are bordered by wide verges and hedgerows, which contribute to local distinctiveness and sense of place. The vegetation bordering these routes helps to close down the cumulative visibility across the area, since the road network runs in both a north south and east west direction. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its PRoW and Access features. Moreover, there are only two PRoW and these are set within a well-vegetated context or associated with built form that plays a positive role in reducing the overall cumulative effects. |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |

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| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

**Landscape Receptor – Public Rights of Way and Access (Cottam 3a and 3b Sites)**

**Receptor Baseline:**

Within the Cottam 3a and 3b Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales is located within the 2km Study Area, but only extending across its eastern most part, then sharing the western most part with RLCT Profile 4b: Wooded Vales. The landscape character type then occupies an eastern part of the 5km Study Area where it shares a boundary with Kirton in Lindsey. The western part of the 5km Study Area then comprises of a mixture of RLCT 2b: Planned and Drained Fens and Carrlands, RLCT 4a: Unwooded Vales and RLCT 4b: Wooded Vales, The Unwooded Vales is generally characterised by mixed agriculture set within an enclosed landscape of low, well-maintained hedgerows.

The sites within Cottam 3 can be sub-divided into two distinct land areas.

- Cottam 3a
- Cottam 3b

**Key Features:**

The Public Rights of Way (PRoW) and Access network is broadly defined to the north by the presence of Laughton Forest, which comprises Laughton Woods and Scotton Common. The woodland is managed by the Forestry Commission and is publicly accessible. In contrast, to the south of the Site/Sites, the landscape is more open, and the field systems are more regular reflected by the grid pattern of local roads. Towards the east there are smaller scale field systems where the footpath network is more intimate and informal with shorter routes that lead in several directions from the small settlements. To the west, the footpath network is sparse and mainly confined to the River Trent corridor and bridleways are only present in Laughton Forest. Small tributaries of the River Trent such a Laughton Highland Drain form crossing points at the junction with the local lanes and these are often the only access points to the river corridor for enjoyment and recreation. There are more minor watercourses and PRoW to the east of the area around Grayingham and Blyborough, however the footpath and bridleway network is very limited. The PRoW network is generally concentrated around settlements of Laughton, Blyton and Pilham, mostly focused along field boundaries and drainage features. Overall, the landscape to the south-west and west (around Blyton and Laughton) has a higher number of footpaths and bridleways in contrast to the landscape to the north and east around Northorpe and Scotton. The B1205 (Kirton Road) is a significant route as it connects Blyton to Northorpe and passes east-west across the area. This is a busy road with little refuge as a recreation route. Green Lane however is an attractive local lane that almost runs parallel with the footpath (Pilh/20/1) to the north. The mainline railway connects Gainsborough to Kirton in Lindsey and beyond. Overall, the Cottam 3b Site is crossed by a footpath in contrast to Cottam 3a Site which supports no footpaths or other recreation networks. An unnamed road borders the eastern boundary of the Cottam 3a Site that connects to Grange Farm from the B1205 (Kirton Road).

The PRoW network is mainly aligned along field boundaries connecting with the local road network and to nearby settlements and farmsteads across the area. The network is generally intermittent because there are few landscape features to help form continuous links. The footpath network is particularly sporadic in the landscape to the west of the Site/Sites and due to these inconsistent links, the local lanes are used to supplement for recreation and the lack of connectivity. The routes mainly follow an east-west and north-south direction to reflect the prevailing landscape pattern and to connect the local lanes with nearby settlements. These footpaths can be divided into the following five clusters across the landscape:

To the north-west around Laughton and Laughton Forest, there is a scattering of footpaths. The footpath network within Laughton includes two short routes within the settlement. The footpath (Laugh/34/1) takes an east-west direction to link Church Road with Blyton Road and the footpath (Laugh/35/1) leads from Scotter Road to connect with Morton Road.

To the north-east around Northorpe, there is a route (Nthp/504/1) which is a Byway Open to All Traffic (BOAT) that takes a north-south route from Grange Farm, crossing Northorpe Beck and a further land drain to then link with a minor track to the south-west of Scotton.

To the south-west around Blyton, there are several footpaths within the settlement that lead in all directions. The footpath (Blyt/32/1) takes a route from Sandbeck Lane passing to the east of Willow Tree Farm. The footpath (Blyt/24/1, Blyt/24/2, and Blyt/26/1) takes an almost north-south direction from Saxon Court to cross the mainline railway to the east of Lineside Farm and then meet with Pilham Lane to the east of Pilham. There are other footpaths within the settlement of Blyton that include Blyt/25/1, Blyt/25/3, Blyt/28/1, Blyt/28/2, Blyt/29/1, Blyt/29/2, Blyt/30/1, Blyt/30/2, Blyt/30/3, and Blyt/31/1,

To the south-east around Yawthorpe, there is one footpath (Corr/22/1) that takes a north-south route just south of Aisby House Farm and Moscar Farm.

Within the central part of the Site/Sites around Pilham, the footpath (Pilh/20/1) takes an east-west route from Pilham Lane, passing to the south of Glebe Farm. The footpath then continues along a green track to join Pilham Lane to the north of Bonsall Farm.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change for the Cottam 3a and 3b Sites (Public Rights of Way and Access), recent trends have shown that the landscape has a strong rural character, but tranquility levels are being disturbed by development pressures from the larger scale settlements and major routes across the area. Tranquility is however associated with the winding lanes and landscape-scale projects such as the Trent Vale Landscape Partnership which can help by offering increased recreational and educational opportunities within these areas.<br><br>**Overall**, the susceptibility of the Public Rights of Way and Access for the Cottam 3a and 3b Sites is conditioned by the limited network of footpaths and bridleways and the availability of the rural roads and minor tracks for extended access. The relevant characteristics therefore have some scope to accommodate change without undue adverse effects. There is however a possibility to increase recreation opportunities including where there are natural features and historical elements to draw interest from residents and tourists. | *Scenic:* Some views from the footpaths and bridleways offer long westward views to the power stations on the River Trent, and eastward views to the scarp face of Lincoln 'Cliff'.<br><br>*Cultural:* The area offers opportunity to create more links between settlements and the surrounding countryside since many afford wide countryside settings.<br><br>*Natural:* Finding links between accessible sites and semi-natural habitats, especially woodlands, for use by walkers, cyclists, and horse riders. For example, the pockets of birch-fringed heathland within and on the margins of the plantations, including the nature reserve of Scotton Common.<br><br>*Recreation and Enjoyment:* Laughton Woods provides an area of open access land that could be better connected, where appropriate to provide more choice of routes.<br><br>*Local Distinctiveness and Sense of Place:* Tranquility is associated with the winding lanes, and this creates a particular sense of place.<br><br>*Health and Wellbeing:* Roads and minor farm tracks are bordered by wide verges and hedgerows, and this contributes to their function in providing an open setting to villages and the overall contribution to health and well-being.<br><br>*Important Spatial Function:* The winding lanes add to the strong rural character of the area that also contributes to its spatial function.<br><br>**Overall**, the value of Public Rights of Way and Access for the Cottam 3a and 3b Sites is shaped by the landscape that has a strong rural character, but tranquility levels are being disturbed by development pressures from the larger scale settlements and major routes across the area. Recreation is provided by the numerous local lanes and public rights of way, some of which remain tranquil, and these features contribute strongly to the 'sense of place'. | *Character:* The interruptions at the bridge crossings, such as Blyton Beck, provide local points of interest and the opportunity to capture views across the landscape in addition to the PRoW network.<br><br>*Quality:* The landscape surrounding the settlements retain some rural and tranquil character with farms, and when in combination with PRoW this adds to their quality.<br><br>*Value:* Areas have a positive landscape character but include some areas of degradation where agricultural intensification has eroded landscape character, and where this occurs with PRoW this impacts on value.<br><br>*Capacity:* The landscape benefits from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Panels to be set back 15m from PRoW.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing. |
| High (5km Study Area) | High (5km Study Area) | **High** | |
| High to Medium (Site/Sites) | High to Medium (Site/Sites) | **High to Medium** | |

| **Landscape Receptor – Public Rights of Way and Access (Cottam 1 Site/ Sites)** | |
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| **Significance of Effect** | The landscape and visual effects for the Public Right of Way (PRoW) Receptors are set out within the Individual PRoW Receptor Sheets at **Appendix 8.3.5.2 [C6.3.8.3.5.2]** and **Appendix 8.3.5.3 [C6.3.8.3.5.3].** |

| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
|---|---|---|---|---|
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be predominantly screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but this would be short term.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not affect any of the landscape receptors in this area. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. Although there would be an alteration to the views | There are limited PRoW that have any close association with this Site either visually or physically. Prow Corr/22/1 lies to the west of the Cottam 2 Site and lies to the southwest of the Cottam 3b Site. The PRoW is not within the Order limits and no further mitigation is proposed to improve this route.<br><br>Within the Cottam 3b Site, Pilh/20/1 (footpath) runs east/west across the centre of the Site. The PRoW is currently very open in parts and provides a somewhat windswept route from Pilham Lane across to Bonsall Farm.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following measures:<br><br>For PRoW Pilh/20/01, mitigation is in the form of creating a 10m wide enclosed route with a tussock grass mix along its length. A new hedge to the north of the PRoW will be provided together with irregularly spaced hedgerow trees to create a much more pleasant walkway. This hedgerow will extend west to join existing vegetation along the route. The existing hedgerow to the south of the route will be enhanced as necessary with the hedge being allowed to grow out and managed to a height of 5m with hedgerow trees added.<br><br>New native hedgerow planting to the field boundaries will be introduced generally as appropriate and existing hedges will be allowed to grow out. Proposed and existing hedgerows to be managed at 5m. Hedgerow trees to be added to existing hedges to further screen views.<br><br>Enhancements to the overall level of tree cover will have a minor but beneficial effect on the setting of the PRoW locally, and although proposed vegetation will be immature at this point it will have established, and existing planting will have been allowed to start growing out.<br><br>The cultural heritage of the farmed landscape surrounding the settlement of Blyton will be retained and enhanced. The mitigation proposals for the PRoW network within the Order limits will bring forward a more varied mix of land use and significantly enhanced grassland areas that will aim to reinforce the historic field pattern in this farmed landscape, where applicable.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of PRoW:<br>- Grassland reversion around PRoW<br>- Improvements to a small number of valuable PRoW<br>- A more varied landscape setting to the PRoW<br>- Improved management of exiting vegetation with less intensively managed land around PRoW | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north and west of the Site will be screened in the mid-range proximity due to the new hedgerows, scattered tree, and shelterbelt planting together with the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with the addition of shelterbelt and scattered tree planting around the Site with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining its overall character of the area.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | and setting of PRoW Pilh/20/1, in terms of this feature as a landscape receptor, its overall quality would be enhanced in the medium to long term and construction generally would have no adverse effects on the integrity of this route. | - Increased visibility/definition of watercourses across the landscape.<br>- Increased woodland/vegetation cover<br>- Increased riparian species vegetation<br>- Improved biodiversity around enhanced PRoW<br>- Improved user experience – less exposed where PRoW and adjacent boundaries are enhanced<br>- No adverse effects on the wider PRoW network with some benefit in terms of increased vegetation across the landscape setting<br><br>Adverse effects (mitigated):<br>- Panels and structures across the landscape but set away from PRoW.<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>At Year 15, the hedgerows will be established, and the hedgerow trees will have begun to mature creating a pleasant and intimate walk. Views into the Cottam 3b Site/Sites from PRoW Pilh/20/1 will be predominantly obscured. The grassland margins around the proposed and existing hedges will also provide considerable biodiversity benefits since these features are very limited at present.<br><br>Within the wider landscape, the shelterbelt and enhanced hedgerows will have fully established and will have begun to mature. Existing hedges will have reached a height of some 3.5m whilst the shelterbelt planting and hedgerow trees will be some 7.5m high screening any potential views into the Site from both the south and the west. Views from the east will be screened by the scattered tree planting which will have reached a height of 7.5m.<br><br>The local PRoW network is able to accommodate the development without undue adverse effects. The proposed development will have no adverse effects in the physical integrity of the PRoW within the Cottam 3a and 3b Site/Sites and there will be beneficial effects in terms of additional tree/hedgerow cover. The biodiversity net gains will also enhance the local character.<br><br>**Overall**, in terms of mitigation for the Cottam 3a and 3b Sites, due to limited connectivity of footpath and bridleway networks the aim is to provide more interpretation and access through good green infrastructure links. There is also scope for improving links between the settlements and the countryside. Providing better access to the landscapes, and the habitats and species they support will improve understanding of their importance. Ensuring that green infrastructure is incorporated into new development will enhance access and recreational opportunities all round, especially developing more links and circular walks. Further use for disused airfields are also a key consideration in terms of recreation and access issues. | |
| **Magnitude** | Very Low | Low | Low | Very Low |

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| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor-Moderate **Not Significant** | Minor-Moderate **Not Significant** | Negligible **Not Significant** |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor-Moderate **Not Significant** | Minor-Moderate **Not Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Public Rights of Way and Access (Cottam 3a and 3b Sites)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 3a and 3b Sites with the other Cumulative Sites (Cottam 1 and 2) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes to the PRoW due to the scope for additional vegetation enhancing the local landscape character. The existing landscape character associated with these PRoW of the Cumulative Sites and Study Area would predominantly provide tree cover along their margins with a change to grassland with scattered trees and a significantly improved hedgerow networks, which would give rise to overall benefits to landscape character in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the PRoW and Access features of the landscape within Cottam 3a and 3b. The wider landscape is typified by roads and watercourses that combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Blyton Beck, provide local points of interest and the opportunity to capture views across the area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a Site, cumulative visibility with the Cottam 1 Site/Sites, Cottam 2 Site and Cottam 3b Site would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of intervisibility between Cottam 3a and 3b Site/Sites, extending from the:<br><br>• Northeast boundary of the Cottam 3a Site/Sites, defined to the west by the Green Respect Burial Park and Park House Farm, and reaching as far as Northorpe in the east<br>• East boundary of Cottam 3a Site/Sites, and stopping short of Cold Harbour Farm; and<br>• North boundary of the Cottam 3b Site/Sites, extending for a short distance as far as Grange Farm and Top Farm.<br><br>Despite the local concentration of intervisibility to the northeast of the Cottam 3a Site/Sites, there are some minor undulations of landform between the settlements of Northorpe and Scotton that follow | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the road and local lane network with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the PRoW and Access features of the landscape within Cottam 3a and 3b. The wider landscape is typified by roads and watercourses that combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Blyton Beck, provide local points of interest and the opportunity to capture views across the area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Site/Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a and 3b Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 3a Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 3a and 3b, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 3a and 3b Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and |

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| | around the flood plain of the River Eau and its various tributaries. These local undulations help to close down visibility across the landscape where there is also one PRoW (Nthp/504/1), comprising a Byway Open to All Traffic (BOAT) heading north from Grange Farm. This BOAT has no intervisibility between the Cottam 3a and 3b Site/Sites.<br><br>There are local patches of intervisibility between Cottam 3a, 3b and Cottam 2 Site/Sites, extending from the:<br>• South boundary of the Cottam 3b Site/Sites, bordered by Pilham to the west and the medieval settlement of Dunstall to the east, and reaching as far as Springthorpe in the south<br>• South boundary of the Cottam 3a Site/Sites, bordered by the eastern edge of Blyton to the west, reaching Grange Farm and stopping short of the mainline railway; and<br>• North boundary of the Cottam 3a Site/Sites, following the alignment of the A159 (Laughton Road) and stopping short to the west of the Green Respect Burial Park.<br><br>The natural features however, such as the meandering watercourses and smaller scale field systems bring a tighter grain and added layers to the landscape, which helps curtail views across these areas of intervisibility. There is one PRoW (Pilh/20/1), comprising a public footpath heading from Pilham in the direction of Bonsdale Farm, which only has visibility towards the Cottam 3b Site/Sites.<br><br>There is a local patch of intervisibility between All Sites, located to the:<br>• East of the Cottam 3b Site/Sites and north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe.<br>To the south of the railway line (and south of Cottam 3b), the primary watercourse comprises the tributaries of the River Till which run in all directions and are divided by areas of geometric woodland, and this enhances the quality of the landscape and its ability to provide enclosure and intimacy, in contrast to the landscape to the north of the railway line. This local patch of intervisibility for All Sites is located to the south of the railway line which benefits from a higher level of enclosure and woodland cover than the landscape to the north of the railway line.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape and Public Rights of Way and Access*<br>Overall, the character of the landscape and the PRoW and Access is shaped by a landscape that benefits from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. In contrast, the watercourses tend to have a more open setting making them more susceptible to change. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3a and 3b Site/Sites would not alter the overall character of the landscape and its PRoW and Access features. Moreover, the two PRoW that are subject to potential intervisibility, but these are set within a | secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 3a Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.<br><br>*Overall Character of the Landscape and Public Rights of Way and Access*<br>Overall, the character of the landscape and the PRoW and Access is shaped by a landscape that benefits from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. In contrast, the watercourses tend to have a more open setting making them more susceptible to change. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3a and 3b Sites would not alter the overall character of the landscape and its PRoW and Access features. Moreover, the two PRoW that are subject to potential intervisibility, but these are set within a well-vegetated context or associated with undulating landform that plays a positive role in reducing the overall cumulative effects. |

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| | well-vegetated context or associated with undulating landform that plays a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is low and very low for the Cumulative Sites because there would be a small-scale alteration of the aesthetic and perceptual aspects of the landscape such as the removal of existing components and the addition of new ones. | |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

| Landscape Receptor – National and Locally Designated Landscapes (Cottam 1 Site/Sites) |
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| **Receptor Baseline:**<br>Within the Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 6a Limestone Scarps and Dipslopes, which is shown on **Figure 8.5 [C6.4.8.5]**. Limestone Scarps and Dipslopes only occupies the eastern most edge of the of the 2km Study Area where it shares a boundary with RLCT Profile: 4a Unwooded Vales, and an eastern section of the 5km Study Area. The northwestern extent of the 5km Study Area is also host to a small part of RLCT Profile 3a: Floodplain Valleys and RLCT Profile: 4b Wooded Vales. The Limestone Scarps and Dipslopes Landscape Character Type is part of the Jurassic Limestone belt that runs from Dorset to the Humber.<br><br>The Site/Sites within Cottam 1 (5km Study Area) can be sub-divided into two distinct land areas:<br>• Cottam 1 North<br>• Cottam 1 South<br><br>The Site/Sites do not include nationally or locally designated landscapes.<br><br>Within the 5km Study Area, there are locally designated landscapes comprising Areas of Greater Landscape Value (AGLV). West Lindsey District Council has bought forward these AGLV within their Local Plan. There are no policy criteria underpinning the AGLV and the composite areas/parts are not identified within the Local Plan. Therefore, for clarity of the descriptions of the AGLV below, are named as follows (as shown on **Figure 8.6 [C6.4.8.6]**.<br><br>• AGLV1 – The Ridge<br>• AGLV2 - Gainsborough<br>• AGLV3 – Laughton Wood<br><br>The Site/Sites for Cottam 1 fall within AGLV1 – The Ridge and AGLV2 – Gainsborough and these areas are likely to include the more sensitive receptors. These AGLV run in a north south direction to reflect the prevailing landscape pattern of the area that extends from Scunthorpe in the north to the city of Lincoln in the south.<br><br>**Key Features:**<br>AGLV1 The Ridge: This is centered on the landscape associated with the distinct landform ridge and around Glentworth, Fillingham, Ingham, Cammeringham and Brattleby to the east of the Site/Sites. The Ridge AGLV lies at the closest proximity to the Site/Sites as close as approximately 200m from the boundary to the north-west of the village of Fillingham. The adjoining escarpment of the Lincolnshire Edge defines this low-lying landscape to the east, and this is an important landscape feature for both the Cottam 1 North and South Sites. The landscape mainly comprises of open arable and pastoral farmland with good hedgerow boundaries. Fillingham is particularly a backdrop for views across the Till Vale due to the abundance of woodland cover associated with Fillgham Castle and Filingham Park that forms a strong feature on the crest of the ridge. The scarp slope then supports further woodlands around Manor Farm to the north of the AGLV at Fillingham that appear as a distinctive feature and help define landscape pattern. There are also further woodlands lining the scarp slopes to the south at Brattleby that include woodlands around Brattleby Hall and Half Acre Plantation. Most of these woodlands are associated with the historic halls and parkland landscapes. The landscape is crossed by minor roads and those that descend from the ridge-top route of the B1398 as steep lanes where valuable views can be experienced over the Till Vale. For example, views from Fillingham across the landscape towards Willingham by Stow are a key feature and views from the junction with the A1500 Roman road that offers extensive views across the scarp and over the Till Vale. The views from this location show the transition within the landscape from the trees and woodlands enclosing the string of historic springline villages at the foot of the slope. Village entrances are secluded and narrow at the top of the scarp slope. Views to the historic buildings and parkland at Glentworth are also a consideration from the northeastern part of the Cottam 1 North Site.<br><br>AGLV2 Gainsborough: This is centered on the landscape associated with the outskirts of Gainsborough to the west of the Site/Sites. The Gainsborough AGLV lies at the closest proximity to the Site/Sites at approximately 3.1km west to the east of Marton, Gate Burton and Knaith. This is the low-lying, gently undulating terrain that rises to the north-east of Gainsborough to around 30m AOD in the vicinity of Thonock Grove and Castle Hills. This relatively elevated land extends as far south as Marton and this eastern boundary of the AGLV marks a very distinct transition between the Trent Valley area and the Till Vale where significant blocks of woodland mark the boundary. Some of these woodlands are ancient woodland including Warren Wood, Lea Wood, Bass Wood, Thurlby Wood and Knaith Park. This combination of tree cover and undulating landform provides a sense of enclosure especially as the AGLV extends as far as the River Trent and its adjacent washlands to the west of Gate Burton, Knaith and Lea, which are more open in contrast. These Trent washlands extend further west towards Treswell, South Leverton and North Leverton adding to the sense of open character within this landscape. There are landmark ruins such as Torksey Castle that lies approximately 1.5km east of Cottam Power Station. The B1241 passes north south through to the east of the AGLV and other north-south routes such as the A156 (within the AGLV) pass through some important historic parklands and remnants of Medieval deer park at Knaith, Gate Burton and Kettlethorpe. |

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
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| In terms of forces for change for the Cottam 1 Site/Sites (National and Local Designations), recent trends have shown that the AGLV has undergone rapid change in some areas and in some parts, this is leading to homogenization of the landscape and loss of hedgerows. However, there is an opportunity to reinforce landscape character and build in more diversity across the area especially in terms of improvements to hedgerows but also in changing the proportion of conifer to broadleaved woodland and improvements to woodland edge species.<br><br>**Overall,** the susceptibility of the National and Local Designations for the Cottam 1 Site/Sites is conditioned by the striking differences across the varying elements of the AGLV and that these can be appreciated across the landscape. There is an opportunity to use landscape mitigation to build upon these differences and bolster this landscape diversity. Particular areas for focus include the proportion of pasture to arable fields in particular those around the edges of settlements which are particularly important to their setting and form a subtle relationship. Within this AGLV, views are generally contained by tall hedgerows, woodlands, and tree groups, giving the landscape very limited capacity to accommodate change. The relevant characteristics therefore have a limited susceptibility to accommodate change without undue adverse effects. There is, however, robust hedgerows with smaller fields and many trees in these locations that assist with mitigation. | *Scenic:* There are striking variations in character and scenic appeal across the differing AGLV, and this diversity is a key element of value. The main feature is how the narrow landscape band of the ridge landscape contrasts with the wider Till Vale.<br><br>*Cultural:* The AGLV provides a culture of 'soft tourism', in the form of walking, cycling, and boating and short breaks and this is a key aspect of this strategy. The villages at the foot of the scarp slope such as Cammeringham and Brattleby benefit from attractive settings due to the presence of woodland cover associated with the historic halls and associated parklands.<br><br>*Natural*: The subtle variations in landform and landscape pattern are a feature that's merits recognition for example the contrast in enclosure and field pattern between the rolling fringes of Gainsborough and the expansive fields of the Till Vale.<br><br>*Recreation and Enjoyment:* There is little direct linkage between the settlements to the east at the lower level, and so the B1398 as the ridge-top road provides the key linkage and dips down to the bottom of the scarp in this location linking villages such as Ingham, Cammeringham and Scampton.<br><br>*Local Distinctiveness and Sense of Place:* There is a strong relationship between landscape character and settlement where many villages derive their sense of place from distinctive views, local landmarks, and features around their edges.<br><br>*Health and Wellbeing:* The district has relatively few tourist 'attractions' and many visitors just simply enjoy the scenic drives, including the historic churches, the Till Vale, and the Lincolnshire Cliff.<br><br>*Important Spatial Function:* The 'nodes' of West Lindsey's waterways (bridges and crossing points) provide important opportunities for views and for appreciating the wider landscape context.<br><br>**Overall**, the value of Nationally and Locally Designated Landscapes for the Cottam 1 Site/Sites is shaped by the striking differences where there is a marked contrast between AGLV1- The Ridge and AGLV 2 - Gainsborough. The steep minor lanes that descend from the ridge-top route of the B1398 offer valuable views over the Till Vale from The Ridge. The landscape settings of historic parklands and built features within the Till Vale are often shrouded in woodland, shelterbelts, or hedgerows at their edges. The skylines, key views, watercourses, and river corridors are key features, but they are particularly vulnerable to landscape change. | *Character:* There is a diverse character with pasture, arable, woodland and hedgerows that create an intricate and textured landscape between the rolling fringes of Gainsborough and the expansive fields of the Till Vale.<br><br>*Quality:* Areas have a positive landscape character with some elements that could be described as unique such as the views from the distinctive ridge of the AGLV1 towards the Trent floodplain.<br><br>*Value:* The Scarps and Dipslopes provide a rural landscape that has remained largely intact where the landscape condition is generally good. The district has relatively few tourist 'attractions' and many visitors just simply enjoy the scenic drives, including the historic churches, the Till Vale, and the Lincolnshire Cliff.<br><br>*Capacity:* There are areas of pastoral landscape and wooded scarps interspersed with small stone-built villages within AGLV1 and this helps retain a tangible connection to the landscape character, but these features are vulnerable and show less tolerance for change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Panels to be set minimum of 20m from major watercourses and minimum of 8m from minor watercourses.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |

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| High (5km Study Area) | High (5km Study Area) | **High** | |
| Medium (Site/Sites) | Medium (Site/Sites) | **Medium** | |

| **Landscape Receptor – National and Locally Designated Landscapes (Cottam 1 Site/Sites)** | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be screened due to existing vegetation, intervening settlements, and topography.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows. Some views from limited specific areas of the elevated land to the east are likely to occur, but these would not affect the integrity of the landscape receptor in itself and would be limited in their duration.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not affect any of the landscape receptors in this area. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. There would not be a fundamental change to the surroundings to the views and settings of the landscape receptors. | In terms of mitigation for the two AGLV's associated with the Cottam 1 Site/Sites, due to their distance and varied relationship with the immediate landscape to their boundaries, it is anticipated that the overall scheme of mitigation that will reinforce the landscape character where this has been lost or eroded in the last century to intensive arable farming.<br><br>There will be a much greater level of tree and hedgerow cover over the Cottam 1 Site/Sites although this will be immature at this point.<br><br>Considerable biodiversity gains will be brought forward by the increase in tree and hedge cover as well as having the benefit of capturing carbon in the longer term.<br><br>The reversion of arable land to grassland will have considerable ecological benefits, widely increasing the biodiversity, resilience, and sustainability of the area generally and starting to improve soil structure and water quality. Varied grassland mixes and flower rich pollinator mixes will build in more diversity and begin to create visual interest across the landscape.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following measures:<br><br><u>Cottam 1 North</u><br>Scattered tree belts are to run adjacent to existing watercourses with buffers of tall herb mix grassland. There will also be two lengths of shelterbelt planting which are intended to run east/west across the Cotton 1 North Site adjacent to existing watercourses to reinforce this feature in the wider landscape. New and enhanced hedgerows across the Site will also strengthen the historical field pattern.<br><br>Enhanced roadside verges along Willingham Road will improve biodiversity. New and enhanced hedgerows around all boundaries will further reinforce the field pattern and help to screen views from the immediate and wider landscape, whilst bird mitigation fields and successional scrub around existing woodland will improve biodiversity across the Cottam 1 North Site/Sites. | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>There will be a much greater level of tree cover over the Cottam 1 Site/Sites. This tree cover will have matured to integrate into the existing field boundary and woodland vegetation both locally and across the wider landscape setting of the two AGLVs.<br><br>The reversion of arable land to grassland will have established to achieve a rich tapestry of habitats where grassland mixes have integrated into their natural environment and established their natural composition with the help of some appropriate management. Soil structure will be much improved through the lack of cultivation and water quality improvement will be seen.<br><br>Views across the Cottam 1 Site/Sites from the two adjacent AGLV's will predominantly be maintained where necessary but will be enhanced to form a richer tapestry of heights, colours and texture.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>By Year 15, new tree cover in the form of scattered native tree belts and shelterbelts/woodlands will have established and begun to mature, reaching a height of some 7.5m. These elements will sit within the landscape and will begin to better define field | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has begun to mature to create a much stronger and robust landscape, retaining and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields are likely to be retaining and the potential may exist to retain grass margins to retain some varied land use and maintain a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | <u>Cottam 1 South</u><br>Scattered tree belts along the route of the River Till will enhance this feature across the wider landscape, whilst a tall herb mix grassland will improve biodiversity and enhance water quality across the Cottam 1 South Site/Sites.<br><br>New and enhanced hedgerows around the boundary of the Cottam 1 South Site/Sites will help to define the historic field pattern and screen views towards the new panel areas.<br><br>Enhanced hedgerows across the Site/Sites, together with areas of shelterbelt planting will further define the field pattern and help to link areas of existing woodland such as Thorpe Wood, Cammeringham Low Covert and Brattleby Gorse.<br><br><u>Cottam 1 West</u><br>Reinstatement of areas of wetland will occur around the River Till with scattered tree belts helping to define the course of this watercourse across the wider landscape. Tall herb mix grassland will also add biodiversity benefit.<br><br>Shelterbelt planting to the western boundaries of the Cottam 1 West Site/Sites will also help to screen views from the west and large areas of bird mitigation planting in open fields will enhance the biodiversity and create a varied mosaic over this area close to the River Till.<br><br>All vegetation will be immature at Year 1 but grasslands will have begun to establish and fill out.<br><br>The cultural heritage of the farmed landscape and its importance in providing a wider setting to the two AGLV's associated with the Cottam 1 Site/Sites will be retained and enhanced. The mitigation proposals will bring forward a more varied mix of land use and significantly enhanced grassland areas that will aim to reinforce the historic field pattern in this farmed landscape, where applicable. To the east, along the Ridge AGLV1 and within the Limestone Scarps and Dipslopes Character Area 6a, the landscape will also benefit from the improvements to the farmed landscape in the Till Vale with this being part of their wider setting. To the west, the landscape is centered on the Gainsborough AGLV2, and the woodlands associated with the outskirts of the settlement will benefit from an improved landscape setting.<br><br>Enhancements to the overall level of tree cover, although immature at this stage will have a very minor but beneficial effect on the setting of the local villages | boundaries and roadsides, with watercourses better presented by riparian species along their winding routes. Hedgerows will have established and outgrown, being managed to a height of 5m creating a layered vegetated scene across the landscape from the higher land and a more intimate environment from the lower levels. Strong lines of tree lined hedges will run across and down the landscape forming a rich pattern of colour and form.<br><br>The two AGLV's are able to accommodate the proposed development without undue adverse effects with long term physical and visual benefits over the Sites as a whole.<br><br>**Overall**, in terms of mitigation for the Cottam 1 Site/Sites, due to the exposed location of Ridge AGLV1, the aim is to retain as many trees as possible and plant native trees particularly where it forms a continuous line at the foot of the steep slopes at the junction with the Till Vale. The aim is also to keep any new routes at the lower elevations and follow natural breaks of slope where possible. The development and management of footpaths for short distance (2-3 mile) walks will also open up local areas of landscape within these locations. Any interventions at the junctions of footpaths should avoid straight alignments at angles to the natural grain in the land. Where waterways are enclosed by steep embankments there should be a priority to open up their presence in the landscape to enhance landscape character. With regards to the Gainsborough AGLV2, development on the higher ridges to the south and east can be accommodated providing it is associated with new tree and hedgerow planting and new development should not impinge on views towards the designed landscapes. | |

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| | | and will enhance the character generally in the context of the two AGLVs.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Designated Landscapes:<br>- Grassland reversion across the Site (s)<br>- A more varied landscape setting to the AGLVs<br>- Improved management of exiting vegetation<br>- Less intensively managed field boundaries<br>- Increased visibility/definition of watercourses across the landscape setting<br>- Protection of existing landscape receptors<br>- Increased woodland/vegetation cover across the wider landscape setting<br>- Increased riparian species vegetation<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Overwintering opportunities for bird species<br>- Improved green corridors across the landscape<br>- Historic field pattern reinforced<br><br>Adverse effects (mitigated):<br>- Panels and structures across the landscape setting of the AGLVs<br>- Increased hard standing areas and infrastructure<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Very Low | Very Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Neutral & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Low | Low | Medium | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| Landscape Receptor – National and Locally Designated Landscapes (Cottam 1 Site/Sites) | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 1 Site with the other Cumulative Sites (Cottam 2, 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes to the wider setting of the AGLVs due to the additional vegetation enhancing the local landscape character. The existing landscape character associated with these Cumulative Sites and Study Area would predominantly provide tree cover along the hedge lines and their margins with a change to grassland with scattered trees, which would give rise to overall benefits to landscape character in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in Nationally and Locally Designated elements or features of the landscape within Cottam 1. The landscape is shaped by the striking differences where there is a marked contrast between the locally designated Areas of Great Landscape Value (AGLV) being AGLV1- The Ridge and AGLV 2 - Gainsborough. The steep minor lanes that descend from the ridge-top route of the B1398 offer valuable views over the Till Vale from The Ridge. The landscape settings of historic parklands and built features within the Till Vale are often shrouded in woodland, shelterbelts, or hedgerows at their edges. The skylines, key views, watercourses, and river corridors are also key features.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam Power Station and the Cottam 1 Site/Sites and extending between the Cottam 1 Site/Sites and Cottam 2 Site (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.1 [C6.4.8.15.1.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the Cable Route Corridor, Cottam 2 Site, and Cottam 3a and 3b Sites and the Cable Route Corridors would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these cumulative sites and the Cable Route Corridors.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites and Cottam 2 Site, located to the:<br>• east of Upton and to the south of Sturgate Airfield<br>• south of Kexby in the locality of Valley Farm<br>• east of Willingham by Stow in the locality of the residential property known as Carisbrooke<br>• east of Stow, just to the east of the property known as Tam Howes; and<br>• west of Sturton by Stow, extending from West Syke Lane as far as Normanby by Stow.<br><br>The Locally Designated features are situated outside these minor patches of intervisibility and are focused around the settlements where the land use at their edges supports a good level of tree and woodland cover to help in curtailing visibility across these areas. To the east, the Ridge AGLV1 is well-contained by the built form (that comprises the string of settlements extending between Scampton in the south as far as Hemswell Cliff in the north) and the associated parklands, woodland cover and tree belts which provide extensive screening and enclosure. To the west, the Gainsborough AGLV2 is well- contained by a local concentration of woodlands that extend from Knaith Park in the south as far north as the A159 at Wharton. These woodlands include Wharton Wood, Birch Wood and Thurlby Wood and provide significant levels of containment and separation within the landscape. There is a particular concentration of cumulative visibility to the northeast of Willingham by Stow, but the local concentration of woodlands comprising Top Wood, Heaton's Wood, and Big Wood help to curtail visibility in this area. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the AGLV with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in Nationally and Locally Designated elements or features of the landscape within Cottam 1. The landscape is shaped by the striking differences where there is a marked contrast between the locally designated Areas of Great Landscape Value (AGLV) being AGLV1- The Ridge and AGLV 2 - Gainsborough. The steep minor lanes that descend from the ridge-top route of the B1398 offer valuable views over the Till Vale from The Ridge. The landscape settings of historic parklands and built features within the Till Vale are often shrouded in woodland, shelterbelts, or hedgerows at their edges. The skylines, key views, watercourses, and river corridors are also key features.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam Power Station and the Cottam 1 Site/Sites and extending between the Cottam 1 Site/Sites and the Cottam 2 Site (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cotton 1 Site/Sites and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 1, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 1 Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercourses across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 1 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow**.** |

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| | There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2 and Cottam 3a Sites, located to the:<br>• northeast of Sturton by Stow, extending between Tillbridge Road and Ingham Road.<br><br>There are no Locally Designated features within this patch of intervisibility. Besides, the landscape features within these areas comprise local undulations in landform found to each side of the River Till and where the presence of large-scale arable fields prevail.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2 and Cottam 3b Sites, located to the:<br><br>• northeast of Sturton by Stow, extending between School Lane Farm and Ingham Road.<br>There are no Locally Designated features within this patch of intervisibility. Besides, the land use features within these areas are focused around local undulations in landform found to each side of the River Till and where the presence of large-scale arable fields prevail.<br><br>There are local patches of intervisibility between All Sites comprising the landscape to the:<br>• east boundary of the Cottam 1 North Site/Sites, extending from Glentworth in the north as far as Ingham in the south.<br><br>There are no Locally Designated features within this patch of intervisibility. Besides, the land use features within these areas are focused on the settlement pattern to the east that includes Ingham, Cammeringham and Brattleby. Woodland is mainly concentrated to the west of Cammeringham and Brattleby and includes geometric shaped shelterbelts and woodland plantations consisting of predominantly native species with large poplar specimens in shelterbelts. The woodlands and settlement help to curtail visibility in this area.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the National and Locally Designated Landscape*<br>Overall, the character of the landscape and the Locally Designated features is shaped by the striking variations in character and scenic appeal across the differing AGLV and this diversity is a key element of value. The main feature is how the narrow landscape band of the ridge landscape contrasts with the wider Till Vale. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape and its Locally Designated features. Moreover, these designations are set within a well-vegetated context or associated with undulating landform that plays a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is low for the Cumulative Sites during the construction and operation(Year 1) stages, because there would be a barely | *Overall Character of the National and Locally Designated Landscape*<br>Overall, the character of the landscape and the Locally Designated features is shaped by the striking variations in character and scenic appeal across the differing AGLV and this diversity is a key element of value. The main feature is how the narrow landscape band of the ridge landscape contrasts with the wider Till Vale. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape and its Locally Designated features. Moreover, these designations are set within a well-vegetated context or associated with undulating landform that plays a positive role in reducing the overall cumulative effects. |

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| | perceptible change to the extent of landscape features and elements of importance. The baseline of the AGLV would not be affected but its wider setting would be improved with the landscape mitigation to yield beneficial effects. | |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very LowDecommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1) **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

**Landscape Receptor – National and Locally Designated Landscapes (Cottam 2 Site)**

**Receptor Baseline:**

Within the Cottam 2 Site, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 6a Limestone Scarps and Dipslopes, which is shown on **Figure 8.5 [C6.4.8.5]**. Limestone Scarps and Dipslopes only occupies the eastern most edge of the 5km Study Area where it shares a boundary with RLCT Profile: 4a Unwooded Vales. The Limestone Scarps and Dipslopes Landscape Character Type is part of the Jurassic Limestone belt that runs from Dorset to the Humber.

The landscape is characterized by the dynamic broad valley of the River Trent which is bordered by large urban areas including the cities of Nottingham and Lincoln connected by a strategic road network in a mostly north south direction. There are also scattered rural settlements perched on the edge of the floodplain that are linked by a smaller network of minor roads and local lanes which generally follow an east west alignment.

The Site/Sites do not include nationally or locally designated landscapes.

Within the 5km Study Area, there are locally designated landscapes comprising Areas of Greater Landscape Value (AGLV). West Lindsey District Council has bought forward these AGLV within their Local Plan. There are no policy criteria underpinning the AGLV and the composite areas/parts are not identified within the Local Plan. Therefore, for clarity of the descriptions of the AGLV below, are named as follows (as shown on **Figure 8.6 [C6.4.8.6]**.

- AGLV1 – The Ridge
- AGLV2 - Gainsborough
- AGLV3 – Laughton Wood

The Site/Sites for Cottam 2 are associated with the AGLV1 – The Ridge and AGLV2 – Gainsborough and these areas are likely to include the more sensitive receptors. These AGLV run in a north south direction to reflect the prevailing landscape pattern of the area that extends from Scunthorpe in the north to the city of Lincoln in the south.

**Key Features:**
AGLV1 The Ridge: This is centered on the landscape associated with the distinct landform ridge and around Grayingham, Blyborough, Willhoughton, Hemswell and Harpswell, to the east of the Site/Sites. The Ridge AGLV lies at the closest proximity to the Site/Sites as close as approximately 3.7km from the boundary between the settlements of Willhougton and Hemswell. The adjoining escarpment of the Lincolnshire Edge defines this low-lying landscape to the east, and this is an important landscape feature for the Cottam 2 Site. The landscape mainly comprises open arable and pastoral farmland with good hedgerow boundaries. Blyborough is particularly a backdrop for views across the Till Vale due to the abundance of woodland cover associated with Blyborough Hall that forms a strong feature on the ascending scarp slope. The scarp slope then supports further woodlands around Glentworth that also appear as a distinctive feature on the scarp slope and help to define landscape pattern. The landscape is crossed by minor roads and those that descend from the ridge-top route of the B1398 as steep lanes provide valuable views over the Till Vale. For example, views from Hemswell across the landscape towards Corringham and Pilham are a key feature that offers extensive views across the scarp and over the Till Vale. The views from this location show the transition from the trees and woodlands within the landscape enclosing the string of historic springline villages at the foot of the slope. Village entrances are secluded and narrow at the top of the scarp slope.

AGLV2 Gainsborough: This is centered on the landscape associated with the outskirts of Gainsborough to the west of the Site/Sites. The Gainsborough AGLV lies at the closest proximity to the Site/Sites at approximately 3.1km west to the north-east of Gainsborough. This is the low-lying, gently undulating terrain that rises to the north-east of Gainsborough to around 30m AOD in the vicinity of Thonock Grove and Castle Hills. This relatively elevated land extends as far south as Marton and this eastern boundary of the AGLV marks a very distinct transition between the Trent Valley area and the Till Vale where significant blocks of woodland mark the boundary. Some of these woodlands are ancient woodland including Wharton Wood, Birch Wood, Somerby Wood, and Whites Wood. This combination of tree cover and undulating landform provides a sense of enclosure especially since the AGLV does not include the River Trent and its adjacent washlands. The AGLV is further contained to the west by urban edge of Gainsborough adding to the sense of enclosure within this landscape. There are landmark features such as Castle Hills Wood ringwork and baileys that overlooks the Trent valley that is thought to date from the 11th or mid-12th century. The A631Corringham Road passes east west and joins the northern section of the AGLV. Other east west routes pass to the north of the AGLV such as the A159 (outside the AGLV) and the Gainsborough to Grimsby mainline railway.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
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| In terms of forces for change for the Cottam 2 Site (National and Local Designations), recent trends have shown that the AGLV has undergone rapid change in some areas, that in some parts is leading to homogenization of the landscape and loss of hedgerows. However, there is an opportunity to reinforce landscape character and build in more diversity across the landscape especially in terms of retaining as many trees as possible and planting native trees to help screen and accommodate built development. There is also scope to build in landscape mitigation, particularly where the Ridge AGLV forms a continuous line at the foot of the steep slope and where the Gainsborough AGLV has an enclosed intimate character that meets with the more open character of the Till Vale.<br><br>**Overall,** the susceptibility of the National and Local Designations for the Cottam 2 Site is conditioned by the striking differences across the varying elements of the AGLV and that these can be appreciated across the landscape from both the higher land of the ridge and the adjoining Till Vale. Particular areas for focus include the proportion of pasture to arable fields in particular those around the edges of settlements which are particularly important to landscape setting and form a subtle relationship. Within this AGLV, views are generally contained by tall hedgerows, woodlands, and tree groups, giving the landscape a very limited capacity to accommodate change. The relevant characteristics therefore have a limited susceptibility to accommodate change without undue adverse effects. | *Scenic:* There is a strong relationship between scenic quality and settlement where many villages derive their character from distinctive views, local landmarks, and features around their edges.<br><br>*Cultural:* Some of the settlements such as Yawhthorpe, Pilham and Aisby are small and compact, although archaeological evidence suggests they may once have been larger. These small settlements are valuable in contrast to the larger villages of Saxilby and Sturton by Stow.<br><br>*Natural:* The River Trent Washlands are important for nature conservation along with the ancient woodlands that contribute to the natural character of the landscape.<br><br>*Recreation and Enjoyment:* The district has relatively few tourist 'attractions' and many visitors just simply enjoy the scenic drives, including the historic churches, and the long views between the Till Vale and the Lincolnshire Cliff.<br><br>*Local Distinctiveness and Sense of Place:* This is a landscape of long views, particularly to the west comprising the scarp face of the Lincoln Cliff which features in many combinations/directions. To the west, the views towards the power stations are curtailed by the settlement of Gainsborough, its relative area of rising land and associated woodland.<br><br>*Health and Wellbeing:* The landscape accommodates a variety of land uses and features including, golf courses and the wider footpath and bridleway network associated with the River Trent.<br><br>*Important Spatial Function:* The historic parklands of Blyborough and other woodland associated with Willhoughton in the east and the woodlands at the edge of Gainsborough in the west contribute to the spatial of the Till Vale.<br><br>**Overall**, the value of National and Local Designations for the Cottam 2 Site is shaped by relationship with the adjoining settlement of Gainsborough and its associated strong woodland blocks. There are also robust hedgerows with smaller fields and many trees in these locations that assist with closing down of views across the area adding to the intimacy of the landscape overall. | *Character:* This is a landscape of long views, particularly to the east comprising the scarp face of the Lincoln Cliff which features in many combinations/directions. To the west, the views towards the power stations are curtailed by the settlement of Gainsborough, its relative area of rising land and associated woodland.<br><br>*Quality:* The pressures are centered around existing woodlands and the combination of tree cover that provides a sense of enclosure in the context of AGLV2. The AGLV is further contained to the west by urban edge of Gainsborough.<br><br>*Value:* Pressure from arable cultivation has resulted in field enlargement, removing boundaries, and creating a more open landscape that has caused alteration/degradation/ or erosion of some features that form the wider setting to the AGLVs.<br><br>*Capacity:* The landscape benefits from its low elevation, and the views from these lowlands towards the elevated areas of AGLV1, which acts as a strong backdrop, and this affects the tolerance of the landscape to change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Panels to be set minimum of 20m from major watercourses and minimum of 8m from minor watercourses.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (river1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| High (5km Study Area) | High (5km Study Area) | **High** | |

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| Medium (Site/Sites) | Medium (Site/Sites) | **Medium** | |

| **Landscape Receptor – National and Locally Designated Landscapes (Cottam 2 Site)** | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be predominantly screened by the existing vegetation cover.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, some views from limited specific areas of the elevated land to the east are likely to occur, but these would not affect the integrity of the landscape receptor in itself and would be limited in their duration.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not unduly affect any of the landscape receptors in the surrounding area. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. There would not be a fundamental change to the surroundings to the views and settings of these landscape receptors. | In terms of mitigation for the two AGLV's associated with the Cottam 2 Site/Sites, due to their distance and varied relationship with the immediate landscape to their boundaries, it is anticipated that the overall scheme of mitigation that will reinforce the landscape character where this has been lost or eroded in the last century to intensive arable farming.<br><br>There will be a much greater level of tree cover and hedgerow cover the Cottam 2 Site/Sites.<br><br>Considerable biodiversity gains will be brought about by the increase in tree and hedge cover as well as having the benefit of capturing carbon.<br><br>The reversion of arable land to grassland will have considerable ecological benefits, widely increasing the biodiversity, resilience, and sustainability of the area generally and starting to improve soil structure and water quality. Varied grassland mixes and flower rich pollinator mixes will build in more diversity and create visual interest across the landscape.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following measures:<br><br>The western boundary of the Cottam 2 Site is to be planted with a strong shelterbelt along its length, augmenting a few areas where vegetation already exists.<br><br>To the south of the Cottam 2 Site/Sites, enhanced hedgerows along the boundary will help to provide a denser form of enclosure generally.<br><br>A scattered tree belt, with riparian species, to the eastern boundaries of the Cottam 2 Site/Sites and bordering the Yawthorpe Beck will mitigate any views towards the Site from the east and the settlement of Yawthorpe and begin to add some structure to the river course across the wider landscape, helping to better define this feature.<br><br>To the north of the Cottam 2 Site/Sites, scattered trees will enhance the character in the wider landscape.<br><br>The cultural heritage of the farmed landscape and its importance in providing a wider setting to the two AGLV's associated with the Cottam 2 Site/Sites will be | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>There will be a much greater level of tree cover over the Cottam 2 Site/Sites. This tree cover will have matured to integrate into the existing field boundary and woodland vegetation both locally and across the wider landscape setting.<br><br>The reversion of arable land to grassland will have established to achieve a rich tapestry of habitats where grassland mixes have integrated into their natural environment and established their natural composition with the help of some appropriate management. Soil structure will be much improved through the lack of cultivation and water quality improvement will be seen.<br><br>Views across the Cottam 2 Site/Sites from the adjacent AGLV's will predominantly be maintained where necessary but will form a richer tapestry of heights, colours and texture.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>By Year 15, new tree cover in the form of scattered native tree belts and shelterbelts/woodlands will have established and begun to mature, reaching a height of some 7.5m. These elements will sit within the landscape and will begin to better define field boundaries and roadsides, with watercourses better | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has begun to mature to create a much stronger and robust landscape, retaining and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields are likely to be retaining and the potential may exist to retain grass margins to retain some varied land use and maintain a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | retained and enhanced. The mitigation proposals will bring forward a more varied mix of land use and significantly enhanced grassland areas that will aim to reinforce the historic field pattern in this farmed landscape, where applicable. To the east, along the Ridge AGLV1 and within the Limestone Scarps and Dipslopes Character Area 6a, the landscape will also benefit from the improvements to the farmed landscape in the Till Vale with this being part of their wider setting. To the west, the landscape is centered on the Gainsborough AGLV2, and the woodlands associated with the outskirts of the settlement will benefit from an improved setting.<br><br>Enhancements to the overall level of tree cover, although immature at this stage will have a very minor but beneficial effect on the setting of the local villages and will enhance the character generally in the context of the two AGLVs.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Designated Landscapes:<br>- Grassland reversion across the Site (s)<br>- A more varied landscape setting to the AGLVs<br>- Improved management of exiting vegetation<br>- Less intensively managed field boundaries<br>- Increased visibility/definition of watercourses across the landscape setting<br>- Protection of existing landscape receptors<br>- Increased woodland/vegetation cover across the wider landscape setting<br>- Increased riparian species vegetation<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Overwintering opportunities for bird species<br>- Improved green corridors across the landscape<br>- Historic field pattern reinforced<br><br>Adverse effects (mitigated):<br>- Panels and structures across the landscape setting of the AGLVs<br>- Increased hard standing areas and infrastructure<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | presented by riparian species along their winding routes. Hedgerows will have established and outgrown, being managed to a height of 5m creating a layered vegetated scene across the landscape from the higher land and a more intimate environment from the lower levels. Strong lines of tree lined hedges will run across and down the landscape forming a rich pattern of colour and form.<br><br>The two AGLV's are able to accommodate the proposed development without undue adverse effects with long term physical and visual benefits over the Site as a whole.<br><br>**Overall**, in terms of mitigation for the Cottam 1 Site/Sites, due to the exposed location of Ridge AGLV1, the aim is to retain as many trees as possible and plant native trees particularly where it forms a continuous line at the foot of the steep slopes at the junction with the Till Vale. The aim is also to keep any new routes at the lower elevations and follow natural breaks of slope where possible. The development and management of footpaths for short distance (2-3 mile) walks will also open up local areas of landscape within these locations. Any interventions at the junctions of footpaths should avoid straight alignments at angles to the natural grain in the land. Where waterways are enclosed by steep embankments there should be a priority to open up their presence in the landscape to enhance landscape character. With regard to the Gainsborough AGLV2, development on the higher ridges to the south and east can be accommodated providing it is associated with new tree and hedgerow planting and new development should not impinge on views towards the designed landscapes. | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Very Low | Very Low | Very Low |

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| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Neutral & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Low | Low | Medium | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| **Landscape Receptor – National and Locally Designated Landscapes (Cottam 2 Site)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 2 Site with the other Cumulative Sites (Cottam 1, 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes to the wider setting of the AGLVs due to the additional vegetation enhancing the local landscape character. The existing landscape character associated with these Cumulative Sites and Study Area would predominantly provide tree cover along the hedge lines and their margins with a change to grassland with scattered trees, which would give rise to overall benefits to landscape character in the combination of all the Cumulative Sites.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the Nationally and Locally Designated Landscape features within Cottam 2. The landscape is shaped by the striking differences where there is a marked contrast between the locally designated Areas of Great Landscape Value (AGLV) being AGLV1- The Ridge and AGLV 2 - Gainsborough. The wider landscape is shaped by relationship with the adjoining settlement of Gainsborough and its associated strong woodland blocks. There are also robust hedgerows with smaller fields and many trees in these locations that assist with closing down of views across the area adding to the intimacy of the landscape overall.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.2 [C6.4.8.15.1.2]** which shows that with the Cottam 2 Site, cumulative visibility with the Cottam 1 Site/Sites and the Cottam 3a and 3b Sites would not be experienced across the entirety of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of intervisibility between the Cottam 2 Site and with the 3a and Cottam 3b Sites extending from the:<br>• South boundary of the Cottam 2 Site, starting at the eastern edge of Corringham and reaching as far as Yawthorpe Beck and Yawthorpe<br>• West boundary of the Cottam 2 Site, extending as far as Pilham Lane<br>• East boundary of the Cottam 2 Site, extending as far Yawthorpe and Yawthorpe Fox Covert<br>• Northwest boundary of the Cottam 2 Site, extending as far as the Cottam 3a and 3b Sites. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the AGLV with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the Nationally and Locally Designated Landscape features within Cottam 2. The landscape is shaped by the striking differences where there is a marked contrast between the locally designated Areas of Great Landscape Value (AGLV) being AGLV1- The Ridge and AGLV 2 - Gainsborough. The wider landscape is shaped by relationship with the adjoining settlement of Gainsborough and its associated strong woodland blocks. There are also robust hedgerows with smaller fields and many trees in these locations that assist with closing down of views across the area adding to the intimacy of the landscape overall.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.2 [C6.4.8.15.2.2]** which shows that with the Cottam 2 Site, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 2 and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 2, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 2 Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge |

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| | The Locally Designated features are situated outside these local patches of intervisibility and is focused around the settlement of Gainsborough where the land use at the edges supports a good level of tree and woodland cover to help in curtailing visibility across these areas. The Gainsborough AGLV2 is well-contained by a local concentration of woodlands that extend from Knaith Park in the south as far north as the A159 at Wharton. These woodlands include Wharton Wood, Birch Wood and Thurlby Wood and provide significant levels of containment and separation within the landscape. There is a particular concentration of cumulative visibility to the northeast of Willingham by Stow, but the local concentration of woodlands comprising Top Wood, Heaton's Wood, and Big Wood help to curtail visibility in this area.<br><br>There is a local patch of intervisibility between the Cottam 2 Site and with the Cottam 3b Site, comprising the:<br>• Northern-most tip of the Cottam 2 Site extending across the medieval village of Dunstall as far as the medieval village of Southorpe; and<br>• Southeast of the River Eau, extending as far as Huckerby Farm and Huckerby Bungalows.<br><br>There are no Locally Designated features within this patch of intervisibility. Besides, the landscape features within these areas comprise local undulations in landform found to each side of the Aisby Beck and Yawthorpe Beck where the presence of large-scale arable fields prevail but small-scale woodland blocks help to close down visibility across the landscape.<br><br>The abundance of farmsteads and their associated agricultural buildings also make a significant contribution in breaking down the visibility between the cumulative sites across this section of the landscape.<br><br>There are local patches of intervisibility between All Sites comprising the:<br>• North of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe<br>• West of the settlement of Corringham, extending from Staplegate House as far Windy Ridge on Pilham Lane<br>• West of Springthorpe, extending across the landscape as far as Harpswell Low Farm; and<br>• East of Yawthorpe, extending as far as Hemswell.<br><br>There are no Locally Designated features within this patch of intervisibility. Besides, the presence of settlement in the open landscape such as Yawthorpe brings mature trees and woodland cover to the landscape setting of the cumulative sites, and this helps in providing separation and screening between them.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the National and Locally Designated Landscape* | Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 2 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site**.**<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow**.**<br><br>*Overall Character of the National and Locally Designated Landscape*<br>Overall, the character of the landscape and the Locally Designated features is shaped by the striking variations in character and scenic appeal across the differing AGLV and this diversity is a key element of value. The main feature is how the narrow landscape band of the ridge landscape contrasts with the wider Till Vale. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its Locally Designated features. Moreover, these designations are set within a well-vegetated context or associated with undulating landform that plays a positive role in reducing the overall cumulative effects. |

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| | Overall, the character of the landscape and the Locally Designated features is shaped by the striking variations in character and scenic appeal across the differing AGLV and this diversity is a key element of value. The main feature is how the narrow landscape band of the ridge landscape contrasts with the wider Till Vale. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its Locally Designated features. Moreover, these designations are set within a well-vegetated context or associated with undulating landform that plays a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is low for the Cumulative Sites during the construction and operation(Year 1) stages, because there would be a barely perceptible change to the extent of landscape features and elements of importance. The baseline of the AGLV would not be affected but its wider setting would be improved with the landscape mitigation to yield beneficial effects. | |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15):: Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

**Landscape Receptor – National and Locally Designated Landscapes (Cottam 3a and 3b Sites)**

**Receptor Baseline:**
Within the Cottam 3a and 3b Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4b Wooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Wooded Vales does not extend into the 2km Study Area, and only occupies the western most extent of the 5km Study Area. At the eastern most edge of RLCT 4a, the boundary is shared with RLCT Profile: 6a Limestone Scarps and Dipslopes.

The sites within Cottam 3 can be sub-divided into two distinct land areas.

- Cottam 3a
- Cottam 3b

The Site/Sites do not include nationally or locally designated landscapes.

Within the 5km Study Area, there are locally designated landscapes comprising Areas of Greater Landscape Value (AGLV). West Lindsey District Council has bought forward these AGLV within their Local Plan. There are no policy criteria underpinning the AGLV and the composite areas/parts are not identified within the Local Plan. Therefore, for clarity of the descriptions of the AGLV below, are named as follows (as shown on **Figure 8.6 [C6.4.8.6]**.

- AGLV1 – The Ridge
- AGLV2 - Gainsborough
- AGLV3 – Laughton Wood

The Site/Sites for Cottam 3a and 3b fall within all three of these AGLV. The Ridge AGLV and Gainsborough AGLV run in a north south direction to reflect the prevailing landscape pattern of the area that extends from Scunthorpe in the north to the city of Lincoln in the south. The Laughton AGLV occupies the landscape to the north-east of Cottam between Scotter and the River Trent.

<u>Cottam 3A</u>
The site does not include nationally designated landscape of AGLV as shown on Figure 8.6
As seen on Figure 8.6, land within the Study Area shows there are locally designated landscapes comprising the AGLV centers around Gainsborough the west [Gainsborough AGLV]. The Ridge AGLV is located approximately 4.8km to the east of the Cottam 3A Site. The Laughton AGLV to the northwest of the Cottam 3A Site within the outer extents of the 2km study area and full within the 5km study area. The Laughton Wood AGLV covers an extensive area of woodland surrounding Laughton and located to the north of the site.
<u>Cottam 3B</u>
The site does not include nationally designated landscape or AGLV as shown on Figure 8.6.
As seen of Figure 8.6, land within the Study Area shows that there is evidence of AGLV to the east around Grayingham and Blyborough [Ridge AGLV]. The Ridge AGLV is located approximately 4.8km to the east of the Cottam 3B site.

**Key Features:**
AGLV1 The Ridge: This is centered on the landscape associated with the distinct landform ridge and around Grayingham, Blyborough, Willhoughton, Hemswell and Harpswell, to the east of the Site/Sites. The Ridge AGLV lies at the closest proximity to the Site/Sites as close as approximately 4.6km from the boundary between the settlements of Grayingham and Willhougton. The adjoining escarpment of the Lincolnshire Edge defines this low-lying landscape to the east, and this is an important landscape feature for the Cottam 2 Site. The landscape mainly comprises of open arable and pastoral farmland with good hedgerow boundaries. Blyborough is particularly a backdrop for views across the Till Vale due to the abundance of woodland cover associated with Blyborough Hall that's forms a strong feature on the ascending scarp slope. The landscape is crossed by minor roads and those that descend from the ridge-top route of the B1398 as steep lanes provide valuable views over the Till Vale. For example, views from Willhoughton across the landscape towards Blyton and Laughton are a key feature that offers extensive views across the scarp and over the Till Vale.

AGLV2 Gainsborough: This is centered on the landscape associated with the outskirts of Gainsborough to the south-west of the Site/Sites. The Gainsborough AGLV lies at the closest proximity to the Site/Sites at approximately 2.1km west to the west of Pilham. This is the low-lying, gently undulating terrain that rises to the north-east of Gainsborough to around 30m AOD in the vicinity of Thonock Grove and Castle Hills. This relatively elevated land extends as far south as Marton and this eastern boundary of the AGLV marks a very distinct transition between the Trent Valley area and the Till Vale where significant blocks of woodland mark the boundary. Some of these woodlands are ancient woodland including Wharton Wood, Birch Wood, and Somerby Wood. This combination of tree cover and undulating landform provides a sense of enclosure especially as the AGLV forms a boundary with the River Trent washlands that extend further west towards East Stockwith and Morton adding to the sense of open character within this landscape.

AGLV3 Laughton Wood: This is centered on the flat, open landscape that is dominated by large areas of woodland sandwiched between the settlements of East ferry, Laughton and Scotter. The area is dominated by the large conifer planation of Laughton Forest. The River Trent and its associated washlands forms part of the visual boundary to the west. The landscape is very flat except for the shallow ridge running north south form Hardwick Hill. There are wide panoramic views across this landscape and a strong perception of big skies except where the blocks of conifers give a strong sense of enclosure and closes down some views. There are also pockets of birch-fringed heathland within the margins of the plantations, including the nature reserve of Scotton.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
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| In terms of forces for change for the Cottam 1 Site/Sites (National and Local Designations), recent trends have shown that the AGLV has undergone rapid change in some areas, for example the woodland in Laughton Woods has been substantially felled in the past. However new planting has been designed to include a mixture of conifers and native deciduous species. Since most of the distinctive landscape patterns and features such as skylines, river corridors and pastures are historic remnants, they are particularly vulnerable to landscape change. Also with the former airbases, local aviation landmarks (control towers, hangers, runway alignment etc.) are important features of the history of the area.<br><br>**Overall,** the susceptibility of the National and Local Designations for the Cottam 1 Site/Sites is conditioned by the rapid change to the area's woodlands but that with new planting they can take on a different appearance over time. The improvement of the presence of airbases in the landscape requires a restoration of their structure which integrates with the scale and character of the surrounding farmland and field patterns. The West Lindsey's airbases currently have a strong and generally negative influence on local landscape character. The cost of developing these sites in this rural location is relatively high. These air bases represent a substantial under used land resource which has landscape potential. The relevant characteristics therefore have a very limited susceptibility to accommodate change without undue adverse effects. There is scope to change the areas of woodland and improve the land use of the former airfields. | *Scenic:* Clear views to village churches are a key feature of the area.<br><br>*Cultural:* The wider landscape setting of the settlements promotes the importance of the landscape and form strong visual relationships between adjoining AGLV.<br><br>*Natural:* Laughton Woods AGLV is valued for its wet heathland, a rare habitat in Lincolnshire and the nature reserve at Scotton is particularly important in this respect, but also a vulnerable feature in terms of future change.<br><br>*Recreation and Enjoyment:* The future of West Lindsey's redundant airbases is a key consideration; however, they can have a degrading influence on landscape character.<br><br>*Local Distinctiveness and Sense of Place:* The presence of individual field boundary oak/ash trees is a key feature of the area, but subject to decline. Even the relatively nondescript occasional trees often seen in isolation can make a crucial contribution to local landscape character.<br><br>*Health and Wellbeing:* The AGLVs in combination provide a culture of 'soft tourism', in the form of walking, cycling, and boating and short breaks and this is a key aspect of the strategy. The villages at the crest of the scarp slope such as Blyborough, Willhoghton and Hemswell benefit from attractive settings due to the presence of woodland cover associated with the historic halls and associated parklands.<br><br>*Important Spatial Function:* There are different landscape patterns that typify the differing landscape character and its contribution to spatial function, and these can be enhanced.<br><br>**Overall**, the value of Nationally and Locally Designated Landscapes for the Cottam 3a and 3b Sites is shaped by the airbases that can generally have a degrading influence since they are prominent on exposed sites. They contribute little to surrounding landscape character, however there is scope to improve their landscape structure. The wider landscape setting of the settlements promotes the importance of the landscape and form strong visual relationships between adjoining AGLV. | *Character:* The character is positive and defined by wooded areas where extensive panoramas are possible. The gently undulating landform, although commonplace, also adds to the local distinctiveness.<br><br>*Quality:* The agricultural intensification and farm amalgamation that is resulting in the loss or damage of many typical landscape features, including traditional patterns of field boundaries in the context of the wider setting of the AGLVs.<br><br>*Value:* The Wooded Vales associated with AGLV2 are valued for recreation which often focuses on the woodland trail network that is focused on Laughton Woods and which attracts visitors from nearby Gainsborough and Scunthorpe.<br><br>*Capacity:* The presence of mature woodland brings a sense of place and a strong framework in parts of the area to mitigate against landscape change. The wider landscape setting of the settlements promotes the importance of the landscape and where it forms a visual relationship between the adjoining AGLV, this adds vulnerability to the landscape. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. Overall, bedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Panels to be set minimum of 20m from major watercourses and minimum of 8m from minor watercourses.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |

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| High (5km Study Area) | High (5km Study Area) | **High** | |
| Medium (Site/Sites) | Medium (Site/Sites) | **Medium** | |

| **Landscape Receptor – National and Locally Designated Landscapes (Cottam 3a and 3b Sites)** | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be screened due to existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows. Some views from limited specific areas of the elevated land to the east are likely to occur, but these would not affect the integrity of the landscape receptor in itself and would be limited in their duration.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not affect any of the landscape receptors in this area. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. There would not be a fundamental change to the surroundings to the views and settings of the landscape receptors. | In terms of mitigation for the three AGLV's associated with the Cottam 3a and 3b Site/Sites, due to their distance and varied relationship with the immediate landscape to their boundaries, it is anticipated that the overall scheme of mitigation that will reinforce the landscape character where this has been lost or eroded in the last century to intensive arable farming.<br><br>There will be a much greater level of tree cover and hedgerow cover over the Cottam 3a and 3b Site/s although this will be immature at this point.<br><br>Considerable biodiversity gains will be brought about by the increase in tree and hedge cover as well as having the benefit of capturing carbon in the longer term.<br><br>The reversion of arable land to grassland will have considerable ecological benefits, widely increasing the biodiversity, resilience, and sustainability of the area generally and starting to improve soil structure and water quality. Varied grassland mixes and flower rich pollinator mixes will build in more diversity and begin to create visual interest across the landscape.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following measures:<br><br>New hedgerows will be provided to the northern boundary of the Cottam 3a Site and to the western boundaries of the Cottam 3b Site where none currently exist, increasing the overall level of hedgerows across the landscape.<br><br>New and enhanced hedgerows to the southern and eastern boundaries of the Cottam 3b Site will further enhance and strengthen these features.<br><br>Within the Cottam 3a Site, enhanced hedgerows, successional scrub, and scattered trees to the south and southwestern boundaries help to buffer existing vegetation and successional scrub along the eastern boundary will abut the existing vegetation adjacent to the watercourse. A large block of successional scrub is also proposed to the western boundary, screening views from the west. | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>There will be a much greater level of tree cover over the Site(s). This tree cover will have matured to integrate into the existing field boundary and woodland vegetation both locally and across the wider landscape setting.<br><br>The reversion of arable land to grassland will have established to achieve a rich tapestry of habitats where grassland mixes have integrated into their natural environment and established their natural composition with the help of some appropriate management. Soil structure will be much improved through the lack of cultivation and water quality improvement will be seen.<br><br>Views across the Site(s) from the adjacent AGLV's will predominantly be maintained where necessary but will form a richer tapestry of heights, colours and forms.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>By Year 15, new tree cover in the form of scattered native tree belts and shelterbelts/woodlands will have established and begun to mature, reaching a height of some 7.5m. These elements will sit within the landscape and will begin to better define field boundaries and roadsides, with watercourses better | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has begun to mature to create a much stronger and robust landscape, retaining and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields are likely to be retaining and the potential may exist to retain grass margins to retain some varied land use and maintain a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation |

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| | | Within the Cottam 3b Site, successional scrub is proposed to the northern boundary adjacent to the railway line, with new and enhanced hedgerows to the southern and eastern boundaries and across this Site/Sites adding to the overall field boundary vegetation.<br><br>The cultural heritage of the farmed landscape and its importance in providing a wider setting to the three AGLV's associated with the Cottam 3a and 3b Sites will be retained and enhanced. The mitigation proposals will bring forward a more varied mix of land use and significantly enhanced grassland areas that will aim to reinforce the historic field pattern in this farmed landscape, where applicable. To the east, along the Ridge AGLV1 and within the Limestone Scarps and Dipslopes Character Area 6a, the landscape will also benefit from the improvements to the farmed landscape in the Till Vale with this being part of their wider setting. To the west, the landscape is centered on the Gainsborough AGLV2, and the woodlands associated with the outskirts of the settlement will benefit from an improved setting. To the northwest, the Laughton Woods AGLV3 is centered on the flat, open landscape that is dominated by large areas of woodland sandwiched between the settlements of East ferry, Laughton and Scotter. The area is dominated by the large conifer planation of Laughton Forest and its setting will benefit from the improvements to the farmed landscape within the Till Vale.<br><br>Enhancements to the overall level of tree cover, although immature at this stage will have a very minor but beneficial effect on the setting of the local villages and will enhance the character generally in the context of the AGLVs.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Designated Landscapes:<br>- Grassland reversion across the Site (s)<br>- A more varied landscape setting to the AGLVs<br>- Improved management of exiting vegetation<br>- Less intensively managed field boundaries<br>- Increased visibility/definition of watercourses across the landscape setting<br>- Protection of existing landscape receptors<br>- Increased woodland/vegetation cover across the wider landscape setting<br>- Increased riparian species vegetation<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Overwintering opportunities for bird species<br>- Improved green corridors across the landscape | presented by riparian species along their winding routes. Hedgerows will have established and outgrown, being managed to a height of 5m creating a layered vegetated scene across the landscape from the higher land and a more intimate environment from the lower levels. Strong lines of tree lined hedges will run across and down the landscape forming a rich pattern of colour and form.<br><br>The two AGLV's are able to accommodate the proposed development without undue adverse effects with long term physical and visual benefits over the Sites as a whole.<br><br>**Overall**, in terms of mitigation for the Cottam 1 Site/Sites, due to district's relatively few tourist 'attractions' the nostalgic value of the airbases and their importance to aviation heritage could be recognised and retained in plans for their future development. The road network is also a priority for conservation and any new planting should be designed to integrate with the existing patten of hedgerows and trees. New planting should also avoid creating a 'linear' corridor of planting which would draw attention to any linear infrastructure developments. Also avoid the implementation of broad landscape belts that could obscure views and detract from the relationship between settlements and their landscape context. A program for monitoring the extent of key landscape features such as hedgerows and trees, together with a scheme for their on-going management. | |

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| | | - Historic field pattern reinforced<br><br>Adverse effects (mitigated):<br>- Panels and structures across the landscape setting of the AGLVs<br>- Increased hard standing areas and infrastructure<br><br>The residual effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Very Low | Very Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Neutral & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Low | Low | Medium | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| **Landscape Receptor – National and Locally Designated Landscapes (Cottam 3a and 3b Sites)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 3a and 3b Sites with the other Cumulative Sites (Cottam 1 and 2) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. There will be positive changes to the wider setting of the AGLVs due to the additional vegetation enhancing the local landscape character. The existing landscape character associated with these Cumulative Sites and Study Area would predominantly provide tree cover along the hedge lines and their margins with a change to grassland with scattered trees, which would give rise to overall benefits to landscape character in the combination of all the Cumulative Sites.<br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the Nationally and Locally Designated Landscape features within Cottam 3a and 3b. The landscape is shaped by the striking differences where there is a marked contrast between the locally designated Areas of Great Landscape Value (AGLV) being AGLV1- The Ridge, AGLV 2 – Gainsborough and AGLV3 – Laughton Wood. The landscape bordering these AGLV is influenced by the airbases that can generally have a degrading impact since they are prominent on exposed sites. They contribute little to surrounding landscape character. The wider landscape setting of the settlements promotes the importance of the landscape and form strong visual relationships between adjoining AGLV where intervisibility exists. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the margins of the AGLV with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the Nationally and Locally Designated Landscape features within Cottam 3a and 3b. The landscape is shaped by the striking differences where there is a marked contrast between the locally designated Areas of Great Landscape Value (AGLV) being AGLV1- The Ridge, AGLV 2 – Gainsborough and AGLV3 – Laughton Wood. The landscape bordering these AGLV is influenced by the airbases that can generally have a degrading impact since they are prominent on exposed sites. They contribute little to surrounding landscape character. The wider landscape setting of the settlements promotes the importance of the landscape and form strong visual relationships between adjoining AGLV where intervisibility exists.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area. |

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| | There would be the introduction of new elements and features comprising the solar panel areas and the substation area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3b Site, cumulative visibility with the Cottam 1 Site/Sites, Cottam 2 Site and Cottam 3b Site would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of intervisibility between the Cottam 3a and 3b Sites, extending from the:<br>• Northeast boundary of the Cottam 3a Site/Sites, defined to the west by the Green Respect Burial Park and Park House Farm, and reaching as far as Northorpe in the east<br>• East boundary of Cottam 3a Site, and stopping short of Cold Harbour Farm; and<br>• North boundary of the Cottam 3b Site, extending for a short distance as far as Grange Farm and Top Farm.<br><br>The Laughton Wood AGLV3 is situated just on the northern-most edge of these local patches of intervisibility where the land use at the edges supports a good level of tree and woodland cover to curtailing visibility at the boundary of the designated area. There is also a very minor encroachment to the southwest of the Cottam 3b Site/Sites into the Gainsborough AGLV2, The Gainsborough AGLV lies at the closest proximity to the Site/Sites at approximately 2.1km west to the west of Pilham. The combination of tree cover and undulating landform provides a sense of enclosure adding to the sense of intimacy within this landscape.<br><br>There are local patches of intervisibility between Cottam 3a, 3b and Cottam 2 Site/Sites, extending from the:<br>• South boundary of the Cottam 3b Site, bordered by Pilham to the west and the medieval settlement of Dunstall to the east, and reaching as far as Springthorpe in the south<br>• South boundary of the Cottam 3a Site/Sites, bordered by the eastern edge of Blyton to the west, reaching Grange Farm and stopping short of the mainline railway; and<br>• North boundary of the Cottam 3a Site/Sites, following the alignment of the A159 (Laughton Road) and stopping short to the west of the Green Respect Burial Park.<br><br>The Gainsborough AGLV2 and the Laughton Wood AGLV3 are located at the outer-most boundary of these local patches of intervisibility, however the presence of woodland blocks in combination with the meandering watercourses and smaller scale field systems brings a tighter grain and added layers to the landscape, which helps curtail cumulative visibility.<br><br>There is a local patch of intervisibility between All Sites, located to the:<br>• East of the Cottam 3b Site and north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe.<br><br>The Gainsborough AGLV2 and the Laughton Wood AGLV3 are located at the outer-most boundary of these local patches of intervisibility, However, to the south of the railway line, the primary watercourse comprises the tributaries of the River Till which run in all directions and are divided by areas of geometric woodland, and this enhances the quality of the landscape and its ability to provide enclosure and intimacy, in contrast to the landscape to the north of the railway line. The presence of woodland blocks in combination with the meandering watercourses and smaller scale field systems brings a tighter grain and added layers to the landscape, which helps curtail cumulative visibility.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets: | *Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with Cottam 3a and 3b, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 3a and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 3a and 3b, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 3a and 3b Sites, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 3a and 3b Sites where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site**.**<br><br>*Overall Character of the National and Locally Designated Landscape*<br>Overall, the character of the landscape and the Locally Designated features is shaped by the striking variations in character and scenic appeal across the differing AGLV and this diversity is a key element of value. The wider landscape is shaped by relationship with the adjoining settlement of Gainsborough and its associated strong woodland blocks. There are also robust hedgerows with smaller fields and many trees in these locations that assist with closing down of views across the area adding to the intimacy of the landscape overall. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its Locally Designated features. Moreover, these designations are set within a well-vegetated context or associated with undulating landform that plays a positive role in reducing the overall cumulative effects. |

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| | **Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the National and Locally Designated Landscape*<br>Overall, the character of the landscape and the Locally Designated features is shaped by the striking variations in character and scenic appeal across the differing AGLV and this diversity is a key element of value. The wider landscape is shaped by relationship with the adjoining settlement of Gainsborough and its associated strong woodland blocks. There are also robust hedgerows with smaller fields and many trees in these locations that assist with closing down of views across the area adding to the intimacy of the landscape overall. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its Locally Designated features. Moreover, these designations are set within a well-vegetated context or associated with undulating landform that plays a positive role in reducing the overall cumulative effects.<br><br>The difference in effect between the addition of the Scheme to the cumulative baseline is low for the Cumulative Sites during the construction and operation (Year 1) stages, because there would be a barely perceptible change to the extent of landscape features and elements of importance. The baseline of the AGLV would not be affected but its wider setting would be improved with the landscape mitigation to yield beneficial effects. | |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

**Landscape Receptor – Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens (Cottam 1 Site/Sites)**

**Receptor Baseline:**
Within the Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends across the majority of the 2km and 5km Study Area apart from the eastern most edge where it shares a boundary with RLCT Profile: 6a Limestone Scarps and Dipslopes. The western extent of the 5km Study Area is also host to a small part of RLCT Profile 3a: Floodplain Valleys and RLCT Profile: 4b Wooded Vales. The Site/Sites within Cottam 1 (2km Study Area) can be sub-divided into two distinct land areas:

- Cottam 1 North
- Cottam 1 South

There are no Listed Buildings, Conservation Areas or Registered Parks and Gardens within the Cottam 1 Site/Sites.

**Key Features:**
Scheduled Monuments: The closest Scheduled Monument to the centre is Thorpe Medieval Settlement (List Entry Number: 1016978) in Thorpe le Fallows hamlet which borders the Cottam 1 Site/Sites to the south. The remains of the medieval village survive well as a series of substantial earthworks of a small settlement established before the late 11th century. Linear ponds adjacent to Thorpe Road are part of the group of remains and the war memorial near the center of the settlement marks the site of the medieval church. Coates Medieval Settlement and Moated Site (List Entry Number 1016979) is located approximately 560m from the boundary of the Cottam 1 South Site. There is a further Scheduled Monument outside the Site in the village of Brattleby called Cross on St Cuthbert's Churchyard (List Entry Number: 1018288) just within 2km of the boundary of the Cottam 1 South Site. Land within the 5km Study Area of the Cottam 1 South Site shows there are several scheduled monuments including Sites at Harpswell comprising Harpswell Hall (List Entry Number: 1019068) which is a post-medieval house and gardens overlying medieval settlement remains. The Site of a college and Benedictine Abbey (List Entry Number: 1012976) can be traced at St Mary's Church to the development of a major ecclesiastical site, The medieval settlement of Broxholme also survives as a series of substantial earthworks and its former open fields. The deserted village of North Ingleby (List Entry Number 100350) between Sturton by Stow and Marton, Knaith Park {List Entry Number 1008685) is the remains of a medieval nunnery of Heynings and Springthorpe (List Entry Number 1016920) is a moated manorial complex immediately north-west of Elm Tree Farm.

Listed Buildings: The Grade I listed Church of St Edith (List Entry Number: 1146742) lies in the hamlet of Coates at the centre of the Cottam 1 North Site. The church is Mid C12, early C13, C15 constructed in coursed limestone rubble, limestone ashlar with a plain tiled roof. The closest listed building in proximity to the Cottam 1 South Site/Sites is located at Thorpe le Fallows comprising Thorpe le Fallows Farmhouse (List Entry Number: 1308921), which is a c.1830 cream brick building with a hipped tiled roof. There are further number Listed Buildings within 2km Study Area of the Cottam Site/Sites. Land within the 5km Study Area for the Cottam Site/Sites shows there are several listed buildings in the village of Hemswell, which are all Grade II Listed apart from the Church of All Saints which displays a square tower of coursed ironstone rubble. Harpswell is host to the Grade I listed Church of St Chad of late C11, C13, C14 and restored C19 that is associated with the memory of the Duke of Cumberland.s "Victory over the rebels". Hemswell Cliff includes the former RAF Officer's Mess (List Entry Number 1435888), Aisthorpe with various Grade II Listed buildings, the Grade I Listed Gateway to Scrampton House which is an early C17 rusticated arch, Broxholme with its various Grade II listed buildings, Ingleby Chase (List Entry 1147263) an c. 1830 House, Brampton with its collection of Grade II Listed buildings, Marton with the Grade I Listed Church of St. Margaret of Antioch with its C11 tower of herringbone masonary , Gate Burton comprising the Grade II listed Gate Burton Hall (List Entry 1359458) Upton with its Grade II* listed Church of All Saints with the West Tower of 176 and Heapam with its Grade I listed Church of All Saints (List Entry 1064048).

Conservation Areas: There are several Conservation Areas including Brattleby, Ingham, Fillingham, Glentworth and Hemswell as follows:
Brattleby: This includes the majority of the village. The immediate grounds of Brattelby Hall are included within the Conservation Area reflecting the importance of the mature tree cover, particularly on the northern village approaches and along the drive to Thorpe Lane. The Church of St Cuthbert and its setting of mature trees is also an important feature along with the other mature trees in and around the village.
*Ingham:* This includes The Green, which is a focal point in the village where the dividing roads are lined with mature and newly planted trees and the main part of The Green slopes gently north-west. The Church of All Saints dominates The Green being set on a low mound above it.
*Fillingham*: This includes the linear form of the main High Street, Chapel Road, and Willingham Road and where they open out at the east end of the village which is an important space defined by the St. Andrew's Church and associated mature trees. Fillingham Castle takes a position on the hillside stretching out along the northern edge of the village and is set within associated woodland overlooking the lake and the village of Fillingham. There is also the Oak Walk leading down from the Cliff escarpment into the village that gives Fillingham its strong identity.
*Glentworth:* This includes the mature tree cover, much of which forms plantations such as Coachroad Plantation and then further plantations to the north, east and south of the village. Glentworth also extends some way up the lower slope of the scarp, that is at St. George's Hill and Hillside Road. The view to the west and south of the village is one of a relatively flat landscape of open fields and trees. The position of Glentworth Hall (Grade II* Listed) that stands prominently to the north-west of the village is also a key feature.
*Hemswell:* This includes the main built areas around Bunkers Hill, Weldon Road, The Church, The Stud and Polar House and Brook Street. The main character of the Conservation Area however can be attributed to its landscape setting on the Cliff edge. These Conservation Areas are all located on rising ground to the east of the Site at the base of the prominent landform running north to south. Land within the 5km Study Area shows there are Conservation Areas at Hemswell and South Carlton.

Registered Parks and Gardens: The closest Registered Park and Garden lies just on the outer eastern 2km Study Area and comprises the Grade II listed Fillingham Castle (List Entry Number: 100097). This was built between c 1760 and 1770 to accompany the house and included a park with a long avenue aligned on the east front that is partly lined with mature oaks, sycamore, and chestnut as far as the east lodge gateway. Gothic-style arches are placed at the extremities of the park. There are two surviving areas of park and woodland including Lady's Wood and Pale Wood to the north-west and north-east and Fox Covert to the south-east. The park has been reduced from its original size to arable farmland.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change for the Cottam 1 Site/Sites (Cultural Designations), recent trends have shown that the main sensitivity is focused on the ancient enclosures that has been weakened by modern agricultural practices. The settlement pattern that defines the contrast between the small compact villages and larger market towns remains largely intact, but their landscape settings are risk of demise from expansion and development.<br><br>**Overall,** the susceptibility of the Cultural Designations for the Cottam 1 Site/Sites is conditioned by string of historic settlements that are aligned approximately north to south and the Trent floodplain where there are surviving ancient enclosures characterised by small field sizes. The mixed farming heritage is also fundamental in retaining landscape character and should be managed to ensure the area continues to reflect its long history of agricultural land use. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects given there is scope to protect the character and diversity of the farming heritage of the area despite the erosion of traditional character and ecosystems through post-war agricultural intensification. | *Scenic:* The line of settlements, aligned approximately north to south, retain much of their historic character. Ancient hedgerows are still evident and sinuous belts of trees and shrubs define ancient parish boundaries.<br><br>*Cultural:* The largest settlement is Gainsborough that has both an active economic and historic influence of the landscape, particularly the port facilities along the Trent.<br><br>*Natural:* Rural tranquility remains a strong feature over the area, however significant development pressures exist from the major roads that traverse the area.<br><br>*Recreation and Enjoyment:* This is focused on the Trent where the gravel terraces have been a focus of human activity for many thousands of years, however there are many tranquil places for people to enjoy the landscape for recreation.<br><br>*Local Distinctiveness and Sense of Place:* This is typified by the strong minor road network, which is wide and sinuous in nature and reflects the strong east to west alignment of the field patterns. North south roads are more directly aligned due to their Roman influence, apart from the road linking the central settlement line which dips and meanders along the scarp slope.<br><br>*Health and Wellbeing:* The tranquil experiential qualities are strong in many places and the sense of history is experienced through the medieval settlement pattern of small compact villages and larger market towns that remain broadly intact.<br><br>*Important Spatial Function:* This is defined by the central settlement line that broadly follows the 20m contour with open field farming systems. Gainsborough also includes a large deer park from the twelfth to the fourteenth century. The hedgerows also provide a link to the past, some marking ancient boundaries and many dating from the period of enclosure.<br><br>**Overall,** the value of the Cultural Designations for the Cottam 1 Site/Sites is shaped by the ancient enclosures and their contrast with the modern fields and planned enclosures that have a strong east to west orientation. The road network also reflects this pattern where Till Bridge Lane follows the course of a Roman road from Ermine Street on the top of the cliff to the former river crossing on the Trent. | *Character:* The line of settlements, aligned approximately north to south, define the historic character. Ancient hedgerows are still evident and sinuous belts of trees and shrubs define ancient parish boundaries.<br><br>*Quality:* The most widespread change has been in agricultural intensification, where the change from pastoral to arable cropping has resulted in loss of hedges, and consequently increase in field sizes close to settlements.<br><br>*Value:* The landscape shows evidence of historic settlement with farms, nucleated villages, and small hamlets such as Thorpe le Fallows and Coates, which are features value that are not highly recognised.<br><br>*Capacity:* Some features make a minimal contribution to landscape character but the ancient enclosures and their contrast with the modern fields and planned enclosures that have a strong east to west orientation are vulnerable. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set back 50m from the boundaries of adjacent dwellings.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium to High (5km Study Area) | Medium to High (5km Study Area) | **Medium to High** | |
| Medium (Site/Sites) | Medium (Site/Sites) | **Medium** | |

| Landscape Receptor – Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens (Cottam 1) | | | | |
|---|---|---|---|---|
| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early parts of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be screened due to existing vegetation in all but the south of field D14 where the boundary between the scheduled monument and the Site/Sites is open. This however will be mitigated by setting the development back by 50m from the northern boundary so that the integrity of the Site/Sites is retained.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited to very few mid-long-range views from these landscape receptors.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would affect one scheduled monument at Thorpe le Fallows to some degree, but its integrity would not be lost. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering in the landscape and the integration of the new panels into this location. There would not be a fundamental change to the surroundings to the views and settings of the landscape receptors. | There are no Listed buildings within the Sites of Cottam 1 North or Cottam 1 South but there are a number within the village of Willingham by Stow to the west, Stow to the Southwest and Kexby to the northwest. To the east, along the ridge, the villages of Fillingham, Ingham, Cammeringham, Brattteby and Glentworth are all host to Listed Buildings. Although their setting is not directly affected by the Scheme, mitigation around the boundary of the Site/Sites will help to ensure that these receptors are not impacted.<br><br>Conservation Areas within these villages are also not unduly affected by the Scheme due to distance and intervening, topography, vegetation/built form.<br><br>Coates Medieval settlement and moated Site sits between the Cottam 1 North and South Sites and is not affected by the Scheme.<br><br>Thorpe Medieval settlement sits to the south of field D14 and would be affected by the Scheme.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following measures:<br><br>There will be a new hedge to the south of field D14 adjacent to the scheduled monument to the south. A 50m buffer of tussock mix grassland will lie to the north of the monument, whilst a 5m width of shelterbelt planting will be provided to the west of this feature.<br><br>Views towards the Site from the village of Ingham to the southeast are mitigated by a large belt of scattered trees following the watercourse on the eastern boundary of the Site at Cottam 1 North. Views from the northeast at the village of Fillingham area mitigated by a new hedgerow with hedgerow trees to the northeastern boundary.<br><br>Scattered tree belts and enhanced hedgerows to the western boundaries of the Site(s) and around the River Till will mitigate any views towards the Site from the west.<br><br>St. Edith's Church (GI) at Coates is predominantly screened from the south by existing vegetation and from the north by existing agricultural buildings and the Site(s) are located some distance from this building and do not affect its setting. | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east, and west of the Cottam 1 Site/Sites will be screened in the close-mid range views through the new hedgerow and shelterbelt planting. The enhancement of existing hedges will be managed to a height of 5m in the middle-distance views. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining its overall character of the area.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>By Year 15, the tree belt, new and enhanced hedgerows will have fully established and will have begun to mature. Existing hedges will have reached a height of some 3.5m whilst the shelterbelt planting and hedgerow trees will be some 7.5m high screening any potential views into the Site from the south, north and the west.<br><br>These landscape receptors are able to accommodate the development without undue adverse effects and there will be beneficial effects in terms of local | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has begun to mature to create a much stronger and robust landscape, retaining and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields are likely to be retaining and the potential may exist to retain grass margins to retain some varied land use and maintain a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | Enhancements to the overall level of tree cover will have a minor but beneficial effect on the setting of the local villages and the Registered Park and Garden at Fillingham Castle.<br><br>The cultural heritage of the farmed landscape immediately surrounding the settlements of Willingham by Stow, Stow and Kexby will be retained and enhanced. The mitigation proposals will bring forward a more varied mix of land use and significantly enhanced grassland areas that will aim to reinforce the historic field pattern in this farmed landscape, where applicable. To the east, along the ridge and within the Limestone Scarps and Dipslopes Character Area 6a, the villages of Fillingham, Ingham, Cammeringham, Brattteby and Glentworth will also benefit from the improvements to the farmed landscape in the Till Vale with this being part of their wider setting.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Heritage Assets:<br>- Enhanced general landscape setting over the longer term to a very limited number of heritage receptors<br>- Improved green infrastructure and ecological links to a small number of heritage sites<br><br>Adverse effects (mitigated):<br>- Panels and structures across landscape – with very limited views from heritage assets in the short term.<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage | tree/hedge cover and biodiversity net gains enhancing the local character.<br><br>**Overall,** in terms of mitigation for the Cottam 1 Site/Sites, due to the landscape that is largely flat, this allows wide views of large-scale features, especially the power stations on the west bank of the Trent. In contrast, views of small-scale features, such as the river corridor and its tributaries are an important asset to be enhanced for their overarching history of the area during the medieval period in particular. The aims are therefore to protect the archaeological value of the River Trent and its features associated with the flood plain. These features include the extensive network on minor roads across much of the area that has changed little since medieval times and the enclosure field pattern landscape that is preserved in some parts. Opportunities to protect the remaining pasture and enhance existing hedgerows where they have been lost will help reinstate historical landscape character. The protection and enhancement of ancient woodlands is also a key consideration by improving awareness and promoting appropriate management. | |
| **5km Study Area** | | | | |
| **Magnitude** | Very Low | Very Low | Very Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Neutral & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor** | | | | |
| **Magnitude** | Low | Very Low | Very Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** |

| Landscape Receptor – Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens (Cottam 1 Site/Sites) | | |
|---|---|---|
| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 1 Site with the other Cumulative Sites (Cottam 2 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. The existing landscape character associated with these Cumulative Sites and Study Area would predominantly provide tree cover along the hedge lines and their margins with a change to grassland with scattered trees, which would give rise to overall benefits to landscape character.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens within Cottam 1. Overall, the landscape is shaped by the ancient enclosures and their contrast with the modern fields and planned enclosures that have a strong east to west orientation. The road network also reflects this pattern where Till Bridge Lane follows the course of a Roman road from Ermine Street on the top of the cliff to the former river crossing on the Trent.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam Power Station and the Cottam 1 Site/Sites and extending between the Cottam 1 Site/Sites and Cottam 2 Site (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.1 [C6.4.8.15.1.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the Cable Route Corridor, Cottam 2, and Cottam 3a and 3b Sites and the Cable Route Corridors would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these cumulative sites and the Cable Route Corridors.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites and the Cottam 2 Site, located to the:<br>• east of Upton and to the south of Sturgate Airfield<br>• south of Kexby in the locality of Valley Farm<br>• east of Willingham by Stow in the locality of the residential property known as Carisbrooke<br>• east of Stow, just to the east of the property known as Tam Howes; and<br>• west of Sturton by Stow, extending from West Syke Lane as far as Normanby by Stow.<br><br>The Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens are focused around the settlements where the land use at their edges supports a good level of tree and woodland cover to help in curtailing visibility across these areas. The landscape features within these areas are focused around local undulations in landform found to each side of the River Till and where the presence of large-scale arable fields prevail. There is a particular concentration of cumulative visibility to the northeast of Willingham by Stow, but the local concentration of woodlands comprising Top Wood, Heaton's Wood, and Big Wood help to curtail visibility in this area.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2, and Cottam 3a Site, located to the:<br>• northeast of Sturton by Stow, extending between Tillbridge Road and Ingham Road.<br><br>The Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens are focused around the settlements where the land use at their edges supports a good level of tree and woodland cover to help in curtailing visibility across these areas. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the landscape margins of these historic features with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens within Cottam 1. Overall, the landscape is shaped by the ancient enclosures and their contrast with the modern fields and planned enclosures that have a strong east to west orientation. The road network also reflects this pattern where Till Bridge Lane follows the course of a Roman road from Ermine Street on the top of the cliff to the former river crossing on the Trent.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam Power Station and the Cottam 1 Site/Sites and extending between the Cottam 1 Site/Sites and the Cottam 2 Site (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that with Cottam 1 Site/Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cotton 1 Site/Sites and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 1, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 1 Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 1 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow. |

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| | There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2, and Cottam 3b Sites, located to the:<br>• northeast of Sturton by Stow, extending between School Lane Farm and Ingham Road.<br><br>The Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens are focused around the settlements where the land use at their edges supports a good level of tree and woodland cover to help in curtailing visibility across these areas.<br>The landscape features within these areas are focused around local undulations in landform found to each side of the River Till and where the presence of large-scale arable fields prevail. There is a particular concentration of cumulative visibility to the northeast of Willingham by Stow, but the local concentration of woodlands comprising Top Wood, Heaton's Wood, and Big Wood help to curtail visibility in this area.<br><br>There are local patches of intervisibility between All Sites comprising the landscape to the:<br>• east boundary of the Cottam 1 North Site/Sites, extending from Glentworth in the north as far as Ingham in the south.<br><br>The Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens are focused around the settlements where the land use at their edges supports a good level of tree and woodland cover to help in curtailing visibility across these areas.<br>The landscape features within these areas are focused on the settlement pattern to the east that includes Ingham, Cammeringham and Brattleby. Woodland is mainly concentrated to the west of Cammeringham and Brattleby and includes geometric shaped shelterbelts and woodland plantations consisting of predominantly native species with large poplar specimens in shelterbelts. The woodlands and settlement help to curtail visibility in this area.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape and Scheduled Monuments Listed Buildings, Conservation Areas and Registered Parks and Gardens*<br>Overall, the character of the landscape is shaped by the predominance of medium and large-scale agriculture. Although this land use is commonplace, the field hedgerows are consistent, strong features and generally in good condition and they play a major role in curtailing the cumulative visibility across the area. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape and the Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens. Moreover, these features play a positive role in reducing the overall cumulative effects. | *Overall Character of the Landscape and Scheduled Monuments Listed Buildings, Conservation Areas and Registered Parks and Gardens*<br>Overall, the character of the landscape is shaped by the predominance of medium and large-scale agriculture. Although this land use is commonplace, the field hedgerows are consistent, strong features and generally in good condition and they play a major role in curtailing the cumulative visibility across the area. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape and the Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens. Moreover, these features play a positive role in reducing the overall cumulative effects. |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low |

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| | Decommissioning: Very Low | Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

**Landscape Receptor – Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens (Cottam 2 Site)**

**Receptor Baseline:**
Within the Cottam 2 to Cottam 3a and 3b Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**.

The landscape is characterized by the dynamic broad valley of the River Trent which is bordered by large urban areas including the cities of Nottingham and Lincoln connected by a strategic road network in a mostly north south direction. There are also scattered rural settlements perched on the edge of the floodplain that are linked by a smaller network of minor roads and local lanes which generally follow an east west alignment.

There are no Scheduled Monuments, Listed Buildings, Conservation Areas or Registered Parks and Gardens within the Cottam 2 Site (2km Study Area).

**Key Features:**

Scheduled Monuments: The closest is Gilby Medieval Settlement and Cultivation Remains (List Entry Number: 1016795) which lies approximately 1.3km to the northwest of the Site occupying the south facing slope of a small knoll adjacent to Gilby Farm. The monument includes the full extent of the surviving remains of the village of Gilby, which was established in the early 12th century. The Deserted Village of Dunstall (List Entry Number: 1004996) lies approximately 0.75km to the northeast of the Site boundary and comprises a network of sunken roads and rectangular crofts with well-preserved ridge and furrow. The only visible earthwork is a raised rectangular area, grassed over, apparently the site of the chapel within the center of the site and a tree on it. Land within the 5km Study Area shows there are scheduled monuments at Southorpe (List Entry Number: 1016794), Willoughton (List Entry 1007689 and 1011456), Springthorpe (List Entry Number: 1016920) and Harpswell (List Entry Number: 1019068).

Listed Buildings: Two isolated listed buildings are in close proximity to the boundary of the Site/Sites, including the Grade II Old Hall (List Entry Number: 1165535) which lies 400m to the west. The house is timber frame with colour washed brick with a pantile roof and 3 brick ridge stacks. There are alterations as early as C14 and leading up to C20. The Grade II Corringham Windmill (List Entry Number: 135941) lies 580m to the south of the boundary of the Site/Sites and is an early C19 3 storey tower mill. There are no other surviving features, and the windmill stands in the middle of an open field. There are further Listed Buildings within the villages of Corringham including the Grade I Listed Church of St. Lawrence (List Entry Number: 1064162) which dates to C11 and is constructed in coursed limestone rubble with ashlar dressings and lead roofs. There is also a 3 stage plain unbuttressed square tower with a paired belfry under round arches. Springthorpe plays host to two listed buildings including the Grade I Listed Church of St. Lawrence (List Entry Number: 1146616), which dates to C11 and is constructed in coursed limestone rubble with slate roofs and stone capped gables with finials. The C11 west bell tower has bell openings on all four sides with round headed openings. Land within the 5km Study Area shows there are listed buildings at Pilham including the Grade II* Listed Church of All Saints (List Entry Number: 1317137) of c.1750 with C19 additions. The western tower has a chamfer topped plinth surmounted by an embattled parapet with 4 stubby corner obelisk pinnacles. At Wilhoughton, there are three Grade II Listed buildings including the Church of St. Andrew (List Entry Number: 1064176). Harpswell includes the Grade I Listed Church of St. Chad (List Entry Number 1309029) with a west tower supporting a bell chamber on three sides and plinth and quoins. Hemswell supports several listed buildings, including the Grade II* Listed Church of All Saints (List Entry Number 1166242) of early C13 with a west tower of 1764 divided by flat string courses, with plinths and quoins. Heapham supports several listed buildings including the Grade I Listed Church of All Saints (List Entry Number: 1064048) of Mid C11 with a Mid C11 rendered west tower with a plinth and clasping pilaster buttresses.

Conservation Areas: There is only one Conservation Area at Springthorpe where the earliest evidence of settlement can be found in the Saxon and Norman construction of the Church of St. Lawrence (List Entry Number: 1146616). The village green is enclosed by several former farm buildings in a close arrangement that forms a bend in the road where views open out onto the green. Land within the 5km Study Area includes the conservation area at Hemswell that sits to the southeast, the setting of which is attributed to its landscape setting on the Cliff Edge. The older properties in the conservation area are all worked of locally built stone (hence the dwelling 'Quarry Hill') on Bunkers Hill. The stone walls are also an important feature in the area as they complement the buildings and other important features include the tree and woodland cover and strong hedgerows that continue into the central parts of the village and are a key feature.

Registered Parks and Gardens: There are no Registered Parks and Gardens on Site or within 2km study area or within the 5km study area of the Cottam 2 Site. The nearest Registered Park and Garden is the Grade II Listed Norton Place (List Entry: 1470334) that includes parkland and gardens to the designs of Thomas White in around 1772. The house (List Entry: 1359423) is Grade I Listed of 1776 and has an associated bridge between the lakes (List Entry: 1165038) in the surrounding parkland to the east.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change for the Cottam 2 Site (Cultural Designations), recent trends have shown that the settlement pattern is a key sensitivity. The contrast between the small compact villages and larger market towns remains largely intact, but the expansion around their edges and the associated impact on landscape character is a key issue. Other sensitivities are focused on the ancient enclosures that has been weakened by modern agricultural practices.<br><br>**Overall,** the susceptibility of the Cultural Designations for the Cottam 2 Site is conditioned by collection of historic settlements that date from medieval and some with stone and bronze age origins where there are visible surviving earthworks and ridge and furrow. The mixed farming heritage is also fundamental in retaining landscape character and should be managed to ensure the area continues to reflect its long history of agricultural land use. The relevant characteristics of the landscape therefore have a moderate to high ability to accommodate change without undue adverse effects given there is scope to protect the character and diversity of the farming heritage through appropriate landscape maintenance and management interventions. | *Scenic:* The attractiveness of the landscape is typified by the strong minor road network, which is wide and sinuous in nature and reflects the strong east to west alignment of the field patterns. North south roads are more directly along the scarp slope, which allow views across the scenic landscape.<br><br>*Cultural:* The line of settlements, aligned approximately north to south, retain much of their historic character and this character extends to comprise the collection of medieval deserted settlements that populate the area between the higher ridge line and the Trent to the west.<br><br>*Natural:* Ancient hedgerows are still evident and sinuous belts of trees and shrubs define ancient parish boundaries.<br><br>*Recreation and Enjoyment:* The tranquil experiential qualities are strong in many places and the sense of history is experienced through the medieval settlement pattern of small compact villages and larger market towns that remain broadly intact and are a focus for recreation and enjoyment.<br><br>*Local Distinctiveness and Sense of Place:* This is focused on the Trent where the gravel terraces have shaped a distinctive landscape where there are many tranquil places for people to enjoy for the landscape recreation.<br><br>*Health and Wellbeing:* Rural tranquility remains a strong feature over the area, however significant development pressures exist from the major roads that traverse the landscape. This area however is generally traversed by a smaller more informal historic road network that passes east to west connecting the Trent to the Roman routes on the ridge line.<br><br>*Important Spatial Function:* The largest settlement is Gainsborough that has both a strong historic influence of the landscape, particularly the heavily wooded landscape that provides a distinctive change in contrast to the regular agricultural land use. These woodlands also provide an attractive setting and approach to Gainsborough.<br><br>**Overall**, the value of the Cultural Designations for the Cottam 2 Site is shaped by the central settlement line that broadly follows the 20m contour of the scarp and ridge. Gainsborough also includes a large deer park and its wooded setting to the north-east is a key feature. The ancient enclosures and deserted villages and their contrast with the modern fields and planned enclosures are also a key feature. | *Character: T*he local character of the landscape is typified by the strong minor road network, which is wide and sinuous in nature and reflects the strong east to west alignment of the field patterns. The line of settlements, aligned approximately north to south, also retain much of their historic character.<br><br>*Quality:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Aisby, Corringham and Pilham. The landscape surrounding these settlements retain a deeply rural and tranquil character.<br><br>*Value:* The largest settlement is Gainsborough that has both a strong historic influence of the landscape, particularly the heavily wooded landscape that provides a distinctive change in contrast to the regular agricultural land use. These woodlands also provide an attractive setting and approach to Gainsborough.<br><br>*Capacity:* The most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, and increase in field size, which affects the capacity of the landscape to absorb change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set back 50m from the boundaries of adjacent dwellings.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium to High (5km Study Area) | Medium to High (5km Study Area) | **Medium to High** | |
| Medium (Site/Sites) | Medium (Site/Sites) | **Medium** | |

| Landscape Receptor – Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens (Cottam 2 Site) | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be screened due to existing vegetation and the built form.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, these would also be obscured from listed buildings in Corringham by existing vegetation and the intervening built form.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not affect any of the landscape receptors in this area. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. There would not be a fundamental change to the surroundings to the views and settings of the landscape receptors. | There are no listed buildings within the Site of the Cottam 2 Site, but there are a number within the village of Corringham to the southwest/west. Although their setting is not directly affected by Scheme, mitigation around the western boundary of the Cottam 2 Site/Sites will help to ensure that these receptors are not impacted.<br><br>There are no Conservation Areas affected by Scheme.<br><br>The deserted village of Dunstall to the northeast of the Site is not affected by the Scheme and its integrity is retained, but shelterbelt planting to the eastern boundary of the Cottam 2 Site/Sites will provide additional tree cover locally.<br><br>Gilby Medieval settlement and cultivation remains (scheduled monument) is not affected by the Scheme and its integrity is retained.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following measures:<br><br>The western boundary of the Cottam 2 Site is to be planted with a strong shelterbelt along its length, augmenting a few areas where vegetation already exists.<br><br>To the south, Corringham Mill stands independently along the A631 with the Site/Sites providing the backdrop when viewed from this road. Enhanced hedgerows along the southern boundary of the Site/Sites will help to provide a more enclosed setting and backdrop to this feature (although the vegetation is set back sufficiently so as to not impact on the current open nature of the immediate setting of the mill).<br><br>A scattered tree belt to the eastern boundaries of the Cottam 2 Site/Sites and bordering the Yawthorpe Beck will mitigate any views towards the Cottam Site/Sites from the east, including views from Yawthorpe.<br><br>Enhancements to the overall level of tree cover will have a minor but beneficial effect on the setting of the local villages. New planting to enhance the setting of Corringham will be beneficial in particular since vegetation cover is sparse around the edges of the settlement and the close proximity to the A631 raises the level of sensitivity at this location. | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east and west of the Cottam 2 Site/Sites will be screened in the close-mid range through the new hedgerows, scattered tree and shelterbelt planting together with the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with the addition of shelterbelt and scattered tree planting around the Cottam 2 Site/Sites with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining its overall character of the area.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>By Year 15, the shelterbelt and enhanced hedgerows will have fully established and will have begun to mature. Existing hedges will have reached a height of some 3.5m whilst the shelterbelt planting and hedgerow trees will be some 7.5m high screening any potential views into the Cottam 2 Site/Sites from both the south and the west. Views from the east will be screened by the scattered tree planting which will have reached a height of 7.5m. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has begun to mature to create a much stronger and robust landscape, retaining and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields are likely to be retaining and the potential may exist to retain grass margins to retain some varied land use and maintain a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | The cultural heritage of the farmed landscape surrounding the settlement of Corringham will be retained and enhanced. The mitigation proposals will bring forward a more varied mix of land use and significantly enhanced grassland areas that will aim to reinforce the historic field pattern in this farmed landscape, where applicable. To the west is the wooded landscape to the east of Gainsborough, which is located within the Wooded Vales Character Area 4b and a fundamental part of the Gainsborough Area of Great Landscape Value (AGLV). The landscape setting of the Gainsborough AGLV2 will therefore also benefit from the improvements to the farmed landscape in the Till Vale with this being part of its wider setting.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Heritage Assets:<br>- Enhanced general landscape setting over the longer term to a very limited number of heritage receptors<br>- Improved green infrastructure and ecological links to a small number of heritage sites<br><br>Adverse effects (mitigated):<br>- Panels and structures across landscape – with very limited views from heritage assets in the short term.<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | These landscape receptors are able to accommodate the development without undue adverse effects and there will be beneficial effects in terms of local tree/hedge cover and biodiversity net gains enhancing the local character.<br><br>**Overall,** in terms of mitigation for the Cottam 2 Site, due to the landscape that is largely flat, this allows wide views of large-scale and prominent features on the horizon, especially towards the wooded edge of Gainsborough. The Trent corridor is also an important asset to be enhanced for its overarching history of the area during the medieval period and the archaeological value of the flood plain. The extensive network on minor roads are part of the appreciation of the landscape and the enclosure field pattern landscape is preserved in some parts. Opportunities to protect the remaining pasture and enhance existing hedgerows where they have been lost will help reinstate historical landscape character. The protection and enhancement of ancient woodlands around Gainsborough is also a key consideration by improving awareness and promoting appropriate management. | |
| **5km Study Area** | | | | |
| **Magnitude** | Very Low | Very Low | Very Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Long Term |
| **Significance of Effect** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor** | | | | |
| **Magnitude** | Low | Very Low | Very Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** |

| Landscape Receptor – Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens (Cottam 2 Site) | | |
|---|---|---|
| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 2 Site with the other Cumulative Sites (Cottam 1 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. The existing landscape character associated with these Cumulative Sites and Study Area would predominantly provide tree cover along the hedge lines and their margins with a change to grassland with scattered trees, which would give rise to overall benefits to landscape character.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens or features of the landscape within Cottam 2. The wider landscape is typified by the central settlement line that broadly follows the 20m contour of the scarp and ridge. Gainsborough also includes a large deer park and its wooded setting to the north-east is a key feature. The ancient enclosures and deserted villages and their contrast with the modern fields and planned enclosures are also a key feature.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.2 [C6.4.8.15.1.2]** which shows that with the Cottam 2 Site, cumulative visibility with Cottam 1 Site/Sites and Cottam 3a and 3b Sites would not be experienced across the entirety of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of intervisibility between the Cottam 2 Site and with the 3a and Cottam 3b Sites extending from the:<br>• South boundary of the Cottam 2 Site, starting at the eastern edge of Corringham and reaching as far as Yawthorpe Beck and Yawthorpe<br>• West boundary of the Cottam 2 Site, extending as far as Pilham Lane<br>• East boundary of the Cottam 2 Site, extending as far Yawthorpe and Yawthorpe Fox Covert<br>• Northwest boundary of the Cottam 2 Site, extending as far as the Cottam 3a and 3b Sites.<br><br>The Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens are focused around the settlements where the land use at their edges supports a good level of tree and woodland cover to help in curtailing visibility across these areas. Despite the intensive agricultural use and lack of hedgerow cover, there are local concentrations of woodland and tree cover at strategic locations between the cumulative sites, which help curtail intervisibility. Between the Cottam 3a and 3b Site/Sites, the woodland and tree cover associated with the mainline railway and Grange Farm and Top Farm is a key land use feature that contributes to reduced visibility across the landscape.<br><br>There is a local patch of intervisibility between the Cottam 2 Site and with the Cottam 3b Site, comprising the:<br>• Northern-most tip of the Cottam 2 Site extending across the medieval village of Dunstall as far as the medieval village of Southorpe; and<br>• Southeast of the River Eau, extending as far as Huckerby Farm and Huckerby Bungalows.<br><br>The Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens are focused around the settlements where the land use at their edges supports a good level of tree and woodland cover to help in curtailing visibility across these areas. The presence of former settlement | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the landscape margins of these historic features with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens or features of the landscape within Cottam 2. The wider landscape is typified by the central settlement line that broadly follows the 20m contour of the scarp and ridge. Gainsborough also includes a large deer park and its wooded setting to the north-east is a key feature. The ancient enclosures and deserted villages and their contrast with the modern fields and planned enclosures are also a key feature.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.2 [C6.4.8.15.2.2]** which shows that with the Cottam 2 Site, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 2 Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 2, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 2 Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 2 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow. |

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| | such as Southorpe brings mature trees and woodland cover to the landscape setting of the cumulative sites, and this helps in providing separation and screening between them.<br><br>There are local patches of intervisibility between All Sites comprising the:<br>• North of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe<br>• West of the settlement of Corringham, extending from Staplegate House as far Windy Ridge on Pilham Lane<br>• West of Springthorpe, extending across the landscape as far as Harpswell Low Farm; and<br>• East of Yawthorpe, extending as far as Hemswell.<br><br>The Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens are focused around the settlements where the land use at their edges supports a good level of tree and woodland cover to help in curtailing visibility across these areas. The intensive agricultural land use also contributes to the abundance of farmsteads and small holdings across this landscape, which also have associated large scale agricultural buildings, tree cover and shelterbelts such as those present at Bonsdale Farm. These features make a significant contribution in breaking down the visibility between the cumulative sites.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape and Scheduled Monuments Listed Buildings, Conservation Areas and Registered Parks and Gardens*<br>Overall, the character of the landscape is shaped by the predominance of medium and large-scale agriculture. The line of settlements, aligned approximately north to south, retain much of their historic character and this character extends to comprise the collection of medieval deserted settlements that populate the area between the higher ridge line and the Trent to the west. The built form of these settlements and their associated tree cover plays a major role in curtailing the cumulative visibility across the area. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and the Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens. Moreover, these features play a positive role in reducing the overall cumulative effects. | *Overall Character of the Landscape and Scheduled Monuments Listed Buildings, Conservation Areas and Registered Parks and Gardens*<br>Overall, the character of the landscape is shaped by the predominance of medium and large-scale agriculture. The line of settlements, aligned approximately north to south, retain much of their historic character and this character extends to comprise the collection of medieval deserted settlements that populate the area between the higher ridge line and the Trent to the west. The built form of these settlements and their associated tree cover plays a major role in curtailing the cumulative visibility across the area. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and the Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens. Moreover, these features play a positive role in reducing the overall cumulative effects. |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term |

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| | Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

**Landscape Receptor – Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens (Cottam 3a and 3b Sites)**

**Receptor Baseline:**
Within the Cottam 3a Site, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales is located within the 2km Study Area, but only extending across its eastern most part, then sharing the western most part with RLCT Profile 4b: Wooded Vales. The landscape character type then occupies an eastern part of the 5km Study Area where it shares a boundary with Kirton in Lindsey. The western part of the 5km Study Area then comprises of a mixture of RLCT 2b: Planned and Drained Fens and Carrlands, RLCT 4a: Unwooded Vales and RLCT 4b: Wooded Vales, The Unwooded Vales is generally characterised by mixed agriculture set within an enclosed landscape of low, well-maintained hedgerows. The Cottam 3 Site can be sub-divided into two distinct land areas.

- Cottam 3a
- Cottam 3b

There are no Conservation Areas or Registered Parks and Gardens within the Cottam 3a and 3b Sites (2km Study Area).
**Key Features:**

Scheduled Monuments: The closest is Gilby Medieval Settlement and Cultivation Remains (List Entry Number: 1016795) which lies approximately 900m to the southwest of the Site occupying the south facing slope of a small knoll adjacent to Gilby Farm. The monument includes the full extent of the surviving remains of the village of Gilby, which was established in the early 12th century. The Deserted Village of Dunstall (List Entry Number: 1004996) lies approximately 1.4km to the south-east of the Site boundary and comprises a network of sunken roads and rectangular crofts with well-preserved ridge and furrow. The only visible earthwork is a raised rectangular area, grassed over, apparently the site of the chapel within the centre of the site and a tree on it. There are scheduled monuments at Southorpe (List Entry Number: 1016794) recorded in the Doomsday Book as one of the two 'Torps'. The church remained standing until the early 16th century, and the most recent buildings to occupy the site of the moated manor were taken down in 1966. Land within the 5km Study Area includes Scheduled Monuments at Willhoughton (List Entry Number: 1007689), which is a monastery of the military orders of Knights Templars and Knights Hospitallers at Temple Garth Farm. The estate was dissolved in 1545 and it was sold to the Saundersons (Earls of Scarborough) and has thus survived largely intact to the present day. Springthorpe (List Entry Number: 1016920) includes a medieval manorial complex immediately north-west of Elm Tree Farm and the visible remains of the complex include a moated platform, or island with a series of earthwork features, including ditched enclosures and remains of medieval ridge and furrow. The Cross in St Martin's Churchyard (List Entry Number: 1018291) lies approximately 940m to the southwest of the boundary of the Cottam 3b Site.

Listed Buildings:
Blyton which sits to the immediate southwest of the Cottam 3a Site, supports several Listed Buildings including the Grade I listed Church of St Martin (List Entry Number:1064159) which is located 660m to the southwest of the boundary of the Site/Sites. The church is constructed in coursed limestone rubble with slate and lead roofs. The west tower is separated by string courses, stepped angled buttresses with a battlemented and pinnacled top. There are further Listed Buildings at Laughton that includes the Grade I listed Church of All Saints (List Entry Number: 131208) located approximately 1.6km from the north-west boundary of Cottam 3a. The church was rebuilt in 1894 by Bodley and Garner and is mainly coursed limestone rubble with ashlar and lead roofs. The C14 stage tower has an embattled parapet with angle and mid wall pinnacles with grotesque water chutes beneath. The Grade II Mount Pleasant Farmhouse (List Entry Number: 131186) also lies to the north of the Cottam 3a Site approximately 600m north of the boundary. This is a late C18 building of brown brick with painted brick dressings, pantile roof with raised brick coped gables. The closest listed building in proximity to the boundary of the Cottam 3b Site is the Grade II Listed Old Railway Station (List Entry Number: 1359454) located 0.32km to the west. This is the former Railway Station of c.1860 with later C19 additions all constructed in pale yellow brick with ashlar dressings and a slate roof. There are further Listed Buildings at Northorpe including the Grade I Church of St John the Baptist (List Entry Number: 1165812). There are number of Listed Buildings in the settlement of Pilham which are predominantly Grade II listed including the Grade II* Listed Church of All Saints (List Entry Number: 1317137) constructed in limestone and blue Lias, banded coursed rubble. The tower is of 2 stages with a chamfer topped plinth surmounted by an embattled parapet with 4 stubby corner obelisk pinnacles.

Conservation Areas: There is only one Conservation Area at Springthorpe where the earliest evidence of settlement can be found in the Saxon and Norman construction of the Church of St. Lawrence (List Entry Number: 1146616). The village green is enclosed by several former farm buildings in a close arrangement that forms a bend in the road where views open out onto the green. Land within the 5km Study Area includes the conservation area at Hemswell that sits to the southeast, the setting of which is attributed to its landscape setting on the Cliff Edge. The older properties in the conservation area are all worked of locally built stone (hence the dwelling 'Quarry Hill') on Bunkers Hill. The stone walls are also an important feature in the area as they complement the buildings and other important features include the tree and woodland cover and strong hedgerows that continue into the central parts of the village and are a key feature.

Registered Parks and Gardens: The closest Registered Park and Garden lies outside the 5km Study Area and comprises the Grade II listed Fillingham Castle (List Entry Number: 100097). This was built between c.1760 and 1770 to accompany the house and included a park with a long avenue aligned on the east front that is partly lined with mature oaks, sycamore, and chestnut as far as the east lodge gateway. Gothic-style arches are placed at the extremities of the park. There are two surviving areas of park and woodland including Lady's Wood and Pale Wood to the north-west and north-east and Fox Covert to the south-east. The park has been reduced from its original size to arable farmland.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change for the Cottam 3a and 3b Sites (Cultural Designations), recent trends have shown that access to historic sites is limited, along with interpretation to raise awareness and improve understanding and enjoyment of local history. The deserted medieval villages are particularly sensitive but also testimony to subsequent change during the medieval period when farming developed to the perimeter of the Cliff Edge.<br><br>**Overall**, the susceptibility of the Cultural Designations for Cottam is conditioned by the presence of several ground features, especially on the plateau, that includes prehistoric burial mounds, Roman artefacts and abandoned medieval villages. The relevant characteristics therefore have a limited capacity to accommodate change without undue adverse effects. However, there is scope for protecting these features and providing interpretation to bring them to the attention of a wider audience. | *Scenic:* Nucleated settlement patterns follow major routes with springline villages along the foot of the Cliff and some estates and parklands.<br><br>*Cultural:* Ermine Street, follows the higher, drier land of the limestone plateau and first world war airfields are a feature along the top of the scarp, with RAF Scampton still active and home to the Red Arrows.<br><br>*Natural:* The sandy habitats of lichen heathland, lowland heathland and dry acid grassland are important features.<br><br>*Recreation and Enjoyment:* The parklands and estates are important historic features including their ancient woodlands and veteran trees. These areas often provide access for quiet recreation.<br><br>*Local Distinctiveness and Sense of Place:* The 'sense of place' and inspiration is mainly derived from accessible viewpoints that enjoy the long-distance views across adjacent areas from the top of the 'Cliff'.<br><br>*Health and Wellbeing:* Panoramic views out over Humberhead Levels to the west and Lincoln Cathedral on top of the Edge above Witham Gap can be enjoyed from many locations.<br><br>*Important Spatial Function:* The spatial character of the area is provided by the large-scale limestone plateau and its west facing scarp known as the 'Cliff', which features as a backdrop in many views across the area.<br><br>**Overall**, the value of the Cultural Designations for the Cottam 3a and 3b Sites is shaped by the historic evidence of the Roman period, with the network of long straight roads, in particular Ermine Street which links Lincoln to the crossing point of the Humber. | *Character:* Nucleated settlement patterns follow major routes with springline villages along the foot of the Cliff and some estates and parklands that provide local points of interest and the opportunity to capture views across the landscape.<br><br>*Quality:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as the Medieval village of Southorpe. The landscape surrounding these settlements retain some rural and tranquil character with farms, but minor lanes and roads are interrupted by the presence the former airfield in parts.<br><br>*Value:* Areas have a positive landscape character but include some areas of degradation where agricultural intensification has eroded landscape character, particularly around the edges of settlements.<br><br>*Capacity:* The landscape benefits from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set back 50m from the boundaries of adjacent dwellings.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium to High (5km Study Area) | Medium to High (5km Study Area) | **Medium to High** | |
| Medium (Site/Sites) | Medium (Site/Sites) | **Medium** | |

| Landscape Receptor – Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens (Cottam 3a and 3b Sites) | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would be screened due to existing vegetation and the built form. The Old Railway Station (Listed Building adjacent to the Site) is predominantly screened by existing vegetation bordering the mainline railway and within the intervening field systems.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, these would also be obscured from listed buildings in Pilham, Northorpe and Blyton by existing vegetation and the built form, but there is likely to be some intervisibility between the Old Railway Station and the Site/Sites.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites.<br><br>These short-lived construction activities would not significantly affect any of the landscape receptors in this area. There would be a change to the arable land use, but the field boundaries and the associated tree cover would remain intact and help with layering and the integration of the new panels. There would not be a fundamental change to the surroundings to the views and settings of the landscape receptors. | There are no Listed buildings within the Site of Cottam 3a or 3b but a small number within the village of Blyton, to the west, Pilham to the Southwest and Northorpe to the northeast, as well as The Railway Station adjacent to the Cottam 3b Site, and although their setting is not directly affected by Scheme, general mitigation around the boundary of the Cottam 3a and 3b Site/Sites will help to ensure that these receptors are not impacted.<br><br>There are no Conservation Areas affected by the Scheme.<br><br>There are no Scheduled Monuments affected by the Scheme.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following measures:<br><br>The western boundary of the Cottam 3a Site is to have an enhanced hedgerow adjacent to the Laughton Road to the north of the Site. Further south along part of the southwestern boundary closest to Blyton village a strong belt of scattered trees will mitigate views of the Site from the southwest. On the western boundary of the Site/Sites adjacent to the northern part of Blyton village, a strong belt of successional scrub is proposed in order to mitigate views from the village and provide good quality biodiversity gains.<br><br>To the north of the Cottam 3a Site/Sites, new hedgerows with hedgerow trees are proposed where none exist and existing hedgerows are to be enhanced, being allowed to grow out and maintained at a height of 5m with the addition of native hedgerow trees spaced irregularly along its length.<br><br>Around the Cottam 3b Site, new and enhanced hedgerow planting to the south-eastern boundaries will further mitigate any views towards the new panel areas from the village of Pilham.<br><br>The listed Station House is located to the east of Pilham Lane adjacent to the railway line with its principal elevations facing south over Cottam 3b and north towards the Cottam 3a Site. Existing vegetation along the railway line will be augmented with successional scrub within the 3b Site/Sites and new hedgerows to the west, together with enhanced hedgerows within the Site/Sites running broadly | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east, and west of the Cottam 3a and 3b Site/Sites will be screened in the close-mid range through the new hedgerows, scattered tree and successional scrub planting together with the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with the addition of scattered tree planting around the Site with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining its overall character of the area.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>By Year 15, the tree belt, new and enhanced hedgerows will have fully established and will have begun to mature. New hedges will have reached a height of some 3.5m whilst the shelterbelt planting and hedgerow trees will be some 7.5m high with existing hedges up to 5m high, screening any potential views into the Site from the south, north and the west. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has begun to mature to create a much stronger and robust landscape, retaining and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields are likely to be retaining and the potential may exist to retain grass margins to retain some varied land use and maintain a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | | north/south will break up the bulk of the panel areas and mitigate views.<br><br>Enhancements to the overall level of tree cover will have a minor but beneficial effect on the setting of the local villages. New planting to enhance the setting of Blyton will be beneficial in particular since vegetation cover is sparse around the edges of the settlement and the close proximity to the former airfield use and strategic and busy road networks raises the level of sensitivity at this location.<br><br>The cultural heritage of the farmed landscape surrounding the settlement of Blyton will be retained and enhanced. The mitigation proposals will bring forward a more varied mix of land use and significantly enhanced grassland areas that will aim to reinforce the historic field pattern in this farmed landscape, where applicable. To the west, is Laughton Wood, which is located within the Wooded Vales Character Area 4b and a fundamental part of the Laughton Wood Area of Great Landscape Value (AGLV). The landscape setting of Laughton Wood AGLV3 will therefore also benefit from the improvements to the farmed landscape in the Till Vale with this being part of its wider setting.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Heritage Assets:<br>- Enhanced general landscape setting over the longer term to a very limited number of heritage receptors<br>- Improved green infrastructure and ecological links to a small number of heritage sites<br><br>Adverse effects (mitigated):<br>- Panels and structures across landscape – with very limited views from heritage assets in the short term.<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | These landscape receptors are able to accommodate the development without undue adverse effects and there will be beneficial effects in terms of local tree/hedge cover and biodiversity net gains enhancing the local character.<br><br>**Overall**, in terms of mitigation for the Cottam 3a and 3b Sites, the sense of place and the diversity of settlements is important and features such as long-distance views inwards to Lincoln Cathedral are to remain unobstructed. The aim is also to maintain the open character of the plateau areas including appropriate redevelopment of disused airfields, re-using their technical and domestic infrastructure, and protecting features of historic interest. The presence of historic ground features including prehistoric burial mounds and evidence of deserted medieval villages is a feature and encouraging their protection through cessation of cultivation and establishment of permanent grassland where possible is a recognized aspect of this farmed landscape and preserving the time depth of the landscape. | |
| **5km Study Area** | | | | |
| **Magnitude** | Very Low | Very Low | Very Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** |

| **Site/Sites and Cable Route Corridor** | | | | |
|---|---|---|---|---|
| **Magnitude** | Low | Very Low | Very Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens (Cottam 3a and 3b Sites)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 3a and 3b Site with the other Cumulative Sites (Cottam 1 and 2) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. The existing landscape character associated with these Cumulative Sites and Study Area would predominantly provide tree cover along the hedge lines and their margins with a change to grassland with scattered trees, which would give rise to overall benefits to landscape character.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens or features of the landscape within Cottam 3a and 3b. The wider landscape is typified by the historic evidence of the Roman period, with the network of long straight roads, in particular Ermine Street which links Lincoln to the crossing point of the Humber. The spatial fabric of the landscape is also provided by the large-scale limestone plateau and its west facing scarp known as the 'Cliff', which features as a backdrop in many views across the area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a Site, cumulative visibility with the Cottam 1 Site/ Sites, Cottam 2 Site and Cottam 3b Site would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of intervisibility between the Cottam 3a and 3b Sites, extending from the:<br>• Northeast boundary of the Cottam 3a Site, defined to the west by the Green Respect Burial Park and Park House Farm, and reaching as far as Northorpe in the east<br>• East boundary of Cottam 3a Site, and stopping short of Cold Harbour Farm; and<br>• North boundary of the Cottam 3b Site, extending for a short distance as far as Grange Farm and Top Farm.<br><br>The Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens are focused around the settlements where the land use at their edges supports a good level of tree and woodland cover to help in curtailing visibility across these areas. Despite the concentration of straight roads that cut bluntly across the open arable landscape, there are concentrations of woodlands to soften their presence such as the Green Respect Burial Park. These woodlands help to close down visibility across the landscape. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the landscape margins of these historic features with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens or features of the landscape within Cottam 3a and 3b. The wider landscape is typified by the historic evidence of the Roman period, with the network of long straight roads, in particular Ermine Street which links Lincoln to the crossing point of the Humber. The spatial fabric of the landscape is also provided by the large-scale limestone plateau and its west facing scarp known as the 'Cliff', which features as a backdrop in many views across the area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Site/Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a and 3b Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 3a Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 3a and 3b, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV [**C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 3a and 3b Sites, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area. |

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| | There are local patches of intervisibility between Cottam 3a, 3b and Cottam 2 Site, extending from the:<br>• South boundary of the Cottam 3b Site, bordered by Pilham to the west and the medieval settlement of Dunstall to the east, and reaching as far as Springthorpe in the south<br>• South boundary of the Cottam 3a Site, bordered by the eastern edge of Blyton to the west, reaching Grange Farm and stopping short of the mainline railway; and<br>• North boundary of the Cottam 3a Site, following the alignment of the A159 (Laughton Road) and stopping short to the west of the Green Respect Burial Park.<br><br>The Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens are focused around the settlements where the land use at their edges supports a good level of tree and woodland cover to help in curtailing visibility across these areas. This section of the landscape is showing higher concentrations of cumulative visibility and land use is mainly arable with a limited presence of settlement. The natural features however, such as the meandering watercourses and smaller scale field systems bring a tighter grain and added layers to the landscape, which helps curtail views across the area and mitigate any effects.<br><br>There is a local patch of intervisibility between All Sites, located to the:<br>• East of the Cottam 3b Site and north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe.<br><br>The Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens are focused around the settlements where the land use at their edges supports a good level of tree and woodland cover to help in curtailing visibility across these areas. The exposed landscape to the east of Cottam 3b Site/Sites is occasionally broken by small plantation woodlands often sheltering dispersed farmsteads and large-scale agricultural buildings such as those at Huckerby Farm and Huckerby Bungalows which bring screening and enclosure.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape and Scheduled Monuments Listed Buildings, Conservation Areas and Registered Parks and Gardens*<br>Overall, the character of the landscape is shaped by the predominance of medium and large-scale agriculture punctuated by nucleated settlement patterns that follow major routes with springline villages along the foot of the Cliff and some estates and parklands. The built form of these settlements and their associated tree cover plays a major role in curtailing the cumulative visibility across the area. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and the Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens. Moreover, these features play a positive role in reducing the overall cumulative effects. | **Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 3a and 3b Sites where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site**.**<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.<br><br>*Overall Character of the Landscape and Scheduled Monuments Listed Buildings, Conservation Areas and Registered Parks and Gardens*<br>Overall, the character of the landscape is shaped by the predominance of medium and large-scale agriculture punctuated by nucleated settlement patterns that follow major routes with springline villages along the foot of the Cliff and some estates and parklands. The built form of these settlements and their associated tree cover plays a major role in curtailing the cumulative visibility across the area. These relevant characteristics of the landscape and land use have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and the Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens. Moreover, these features play a positive role in reducing the overall cumulative effects. |

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| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

- **Landscape Receptor – Ancient Woodlands and Natural Designations (Cottam 1 Site/Sites)**

- **Receptor Baseline:**
- Within the Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends across the majority of the 2km and 5km Study Area apart from the eastern most edge where it shares a boundary with RLCT Profile: 6a Limestone Scarps and Dipslopes. The western extent of the 5km Study Area is also host to a small part of RLCT Profile 3a: Floodplain Valleys and RLCT Profile: 4b Wooded Vales.

- The Site/Sites within Cottam 1 (2km Study Area) can be sub-divided into two distinct land areas:
- Cottam 1 North
- Cottam 1 South

- There are no Ancient Woodlands, Local Nature Reserves, Local Wildlife Sites or Sites of Special Scientific Interest (SSSI) on Site or within the Cottam 1 Site/Sites.

- **Key Features:**

- Ancient Woodlands: The closest Ancient Woodland is Burton Wood (Index MLI50651) at Gate Burton which is to the west (approximately 3.5km) of Normanby by Stow and the Cottam 1 Site/Sites. This woodland is mainly classified as semi-natural with the remaining 4 hectares classified as plantation and is closely associated with the Grade II* Listed Gate Burton Hall (List Entry 1359458). The house dates to the 17th and early 18th century and was formed as part of the Knaith Estate and also includes a later 19th century farmstead, coach house and stables. There is remnant parkland to the north, south and west of the hall, but the land to the east (surrounding Burton Wood) is in agricultural use. Within the 5km Study Area, other Ancient Woodland can be found at Stag Wood just to the north of the settlement of Knaith Park. Thurlby Wood, which forms part of a group of other woodlands such as Hermit Dam Wood, located between the settlements of Lea and Upton. The woodland lies in close proximity to the Hermit Dam moated site (List Entry: 1016110) and north-east of Hermit Dam Wood. Aside from the flood plain grazing marsh, the Ancient Woodland and ancient re-planted woodland provides one of the key habitats on the boundary with the Till Vale landscape to the east of the Trent.

- Local Nature Reserves (LNRs): The closest Local Nature Reserve is at Owlet Plantation west of Blyton, but this is located in closer proximity to the Cottam 2 Site. The woodland comprises birch, oak and pine interspersed among open heathland and also supports an important diversity of invertebrates. Remnants of the heathland are still evident, and they form part of the Coversands Heathland. There is good public access over most of the site due to the extensive footpath network which is dry all year due to the sandy soil.

- Local Wildlife Sites (LWSs): There are three LWSs located in close proximity to the Cottam 1 Site/Sites. The Willingham to Fillingham Lane Verges LWS is located adjacent to the boundary of the Cottam 1 North Site/Sites. This is a 3 – 3.5m wide roadside verge where the main habitats are calcareous grassland and neutral grassland (unimproved, semi-improved). Additional habitats include coarse grassland, species rich hedgerow and ditches. There are two other sites separated from the Cottam 1 Site/Sites by approximately 165m and 1.1km respectively. These LWSs are present due to the network of quiet lanes that lead to the villages, especially where they are associated with the watercourses such as the crossings of the River Till and its associated tributaries, otherwise the floodplain grazing marsh is the most extensive semi-natural habitat focused along the Trent. Where woodland cover is limited, these watercourses and quiet lanes provide an important substitute woodland and woodland edge habitat as well as being significant linear features in the landscape.

- Sites of Specific Scientific Interest (SSSI's): The closest SSSI is located at Lea Marsh, to the northwest (approximately 6.9km) of the Cottam 1 North Site. closest Local Wildlife Site is located to the western edge of River Trent, to the north-west direction of the settlement of Lea and south of the settlement of Gainsborough. The SSSI forms part of the Lea Marsh and the associated Lea Marshes Main Drainage network. Away from the flood plain, the habitat distribution is confined to features such as hedgerows, field margins, ponds, 'unimproved' grassland, and copses.

| • **Receptor susceptibility to change** | • **Value of Receptor** | • **Sensitivity** | • **Embedded Mitigation** |
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| • In terms of forces for change for the Cottam 1 Site/Sites (Natural Designations), recent trends have shown that changes in soils structure and water table levels can modify habitats. For example, the woodlands that are least modified in the area are formed on the historic heath at Morton and Laughton Commons. Other factors causing change to habitats is the cessation of grazing leading to a succession from heathland to woodland. Sycamore regeneration, aged tree stock and tree disease is also a key issue. The high volume of dog walkers is also a consideration. Also, because of the fertilizer inputs, the main surviving areas of semi-natural habitat tend to be confined to the floodplain grazing marsh and sites such as Lea Marsh SSSI.<br><br>• **Overall,** the susceptibility of the Natural Designations for the Cottam 1 Site/Sites is conditioned by the underlying geology and drainage patterns. The change in habitat types is also conditioned by the cessation of the use of agricultural sprays and lead to the encouragement of vigorous grasses as is evident at the Willingham to Fillingham Lane Verges LWS. The heavy mowing of verges close to residential properties is also a concern in terms of change and interpretation/awareness raising could be considered. The presence of the north south road network also severs habitat connectivity in some areas. The A156 is a major route that divides the Trent flood plain from the Till Vale to the east. The relevant characteristics of the landscape therefore have a limited ability to accommodate change without undue adverse effects given there is scope to protect and enhance the natural character of the minor east west local road network. There is also scope to improve linkages between the Trent flood plain and the Till Vale to the east by improving connectivity across major routes such as the A156 (Gainsborough Road). | • *Scenic:* The broadleaved woodlands, copses and networks of hedgerows provide important habitats for farmland species. The network of woodlands to the west of Cammeringham and Brattleby are notable and a further network to the north of Coates.<br><br>• *Cultural:* The bedrock geology of Triassic and Jurassic mudstones has given rise to a variety of habitats due to the wide variety of soils; however very little semi-natural habitat remains across the area despite the rich geodiversity.<br><br>• *Natural:* The wet and often peaty low-lying areas are key in supporting some habitats and types of woodland such as Owlet Plantation. These woodlands and their associated habitats are now less widespread in the locality.<br><br>• *Recreation and Enjoyment:* This is mainly confined to the road networks due to lack of PRoW. The Willingham to Fillingham LWS contributes to this access network. Further west, Littleborough Lane is an important route lining with Stow Park Road.<br><br>• *Local Distinctiveness and Sense of Place:* The Trent flood plain displays many meanders that gives the area its distinctiveness and sense of place but is disconnected from the Till Vale landscape by the strong north south road network. Elsewhere the SSSI at Lea Marsh is the only other location that connects the Trent flood plain with the Till Vale to the east, apart from Knaith Hill at Knaith and Trent Port Road at Marton.<br><br>• *Health and Wellbeing:* The Trent flood plain is a key asset and there are road networks that connect to the river corridor that can be promoted for biodiversity due to their tranquil qualities. The road network to the south of Gate Burton such a Clay Lane and Willingham Road are key routes that connect east west.<br><br>• *Important Spatial Function:* Areas of pasture and grassland habitats add to the spatial function of the area where they are present particularly due to the change of intimacy within the landscape.<br><br>• **Overall,** the value of the Natural Designations for the Cottam 1 Site/Sites is shaped by the rich geodiversity, however the predominant use of the land for agriculture means that very little semi-natural habitat remains across the area. Changes to morphological and hydraulic characteristics have affected species abundance and decreased the range of population of some species. The increase in episodic events such as precipitation, flow rate and temperature caused by extreme events is also a key cause for change. | • *Character:* Enhancing the habitat connectivity of streams, dykes and other watercourses in the landscape would bring forward some positive benefits.<br><br>• *Quality:* The most widespread change has been in agricultural intensification, where the change from pastoral to arable cropping has resulted in loss of hedges, and consequently increase in field sizes and reduced connectivity.<br><br>• *Value:* Areas of pasture and grassland habitats add to the spatial function of the area where they are present particularly due to the change of intimacy within the landscape.<br><br>• *Capacity:* Features are evident, but they are locally | • Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>• Panels to be set back 20m from existing woodlands with an ecological buffer between.<br><br>• Panels to be set a minimum of 3m from Site boundaries.<br><br>• Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>• Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>• Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>• The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited |

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| | | commonplace and the predominant use of the land for agriculture means that very little semi-natural habitat remains across the area leaving the landscape vulnerable to change. | physical or landscape character impact at this Embedded Mitigation stage. |
| • Medium (5km Study Area) | • Medium (5km Study Area) | • **Medium** | • |
| • Medium (Site/Sites) | • Medium (Site/Sites) | • **Medium** | • |

| Landscape Receptor – Ancient Woodlands and Natural Designations (Cottam 1 Site/Sites) | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited and would not affect the integrity of woodlands or other designated receptors.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites creating a much greater level of vegetation locally, creating many associated beneficial effects.<br>There may be very minor removal of sections of hedgerow around access roads for visibility purposes.<br><br>These short-lived construction activities would not adversely affect the local woodlands, existing vegetation, or designated areas. There would be a change to the arable land use which will be beneficial to soils and watercourses, significantly increase biodiversity and help to capture carbon. The field | Designations lie predominantly to the west/southwest of both the Cottam 1 North and South Sites with Ancient Woodland, Local Nature Reserves and Local Wildlife Sites within the study area but having no physical or visual impact/influence on the Site/Sites other than distant views where these may exist. Opportunities for reinforcement of the character area within both the Cottam 1 Site/Sites and Cottam Site are available.<br><br>Both Sites lie outside the outer limits of any of the SSSI's impact risk zones locally. Reversion of arable farmland to varied pasture within the Site/Sites provides opportunities for some natural regeneration and improved biodiversity and potential wildlife links.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following changes to the landscape:<br><br>Wildflower meadow mix to be sown beneath proposed panels.<br><br>Existing hedgerows to be allowed to grow out and managed to a height of 5m with additional trees added. New hedgerows with hedgerow trees planted along roadsides where none exist.<br><br><u>Cottam 1 North</u><br>Within the Cottam 1 North Site, reinforcement of the character includes enhancement of the local woodland cover including Larch Plantation and Fillingham Low Wood as well as a strong belt running north/south to the west of Turpin Farm. This provides a strong buffer of successional scrub a minimum of 15m wide around each woodland feature which enhances the biodiversity as well as strengthening the character locally and helping to link up with the adjacent hedgerows and shelterbelts.<br><br>Strong linear shelterbelts adjacent to Side Farm help to link up areas of woodland visually and physically via augmented hedgerows and provide a strong buffer adjacent to the existing watercourse, further enhancing its setting and its biodiversity.<br><br>Tall herb mixes adjacent to this and another watercourse to the south will help to enhance this feature with open sides and riparian tree species strengthening the character locally. It will also help to strengthen the physical links between the Trent Flood Plain and the Till Vale which are currently eroded by the existing road system in parts of the area.<br><br>Enhanced roadside verges (with margin verge habitat created from a LWS donor) along the Willingham Road running east/west will also augment these links and improve the biodiversity and habitat along this important route.<br><br><u>Cottam 1 South</u><br>Within the Cottam 1 South Site, there are several small woodlands including Cameringham Low Covert, Thorpe Wood and Brattleby Gorse which provide a good level of cover locally and will be linked to each other and further afield with enhanced and new hedgerows. Successional scrub will be provided as necessary at the base of some of these woodlands to increase the biodiversity and transitional value to the grassland beyond. Two small areas of scattered native tree belts will augment this woodland cover and help to create valuable links (including integrating lone field trees into the landscape). | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east, and west of the Cottam 1 Site will be screened in the close-mid range proximity due to the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining and enhancing the overall character of the area.<br><br>The proposed grassland will have established and will have settled into its natural scheme with some minor appropriate management of differing regimes. The soil quality will be considerably improved through the lack of cultivation and the chemical run-off will be reduced around the Site(s) enhancing the water quality generally. There will be considerable biodiversity gains through the establishment of the varied grassland types and regimes and a long-term increase in pollinator species and bird and other species and numbers locally.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15. | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |

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| | boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new panels. There would be no adverse changes to the woodlands or vegetation with buffer planting implemented around these, further protecting these assets.<br><br>Overall, the local woodland and other vegetated cover, both within the Site and of the wider area, is able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all features will be retained and enhancement at ground level through initial grassland planting will have beneficial effects from the outset. | To the west, where the panel areas sit adjacent to the River Till, reinstated floodplain meadows will enhance the local character and create a much more resilient landscape. Around this important feature, the panel areas will be mitigated with strong belts of scattered native riparian trees to reinforce the character of this landscape type and ensure Scheme has some separation from the river. Strong buffers of tall herb mixes around the river will further strengthen this character, enhance biodiversity, and improve water quality. Large areas of bird mitigation habitat, although not evident beyond the local area will significantly enhance the biodiversity by providing valuable habitats around this watercourse. Although this area is less well wooded, enhancement of field boundaries and riparian tree belts will add to the overall character.<br><br>The addition of irregularly spaced hedgerow trees across the Cottam 1 South Site will help increase the tree cover locally and create additional biodiversity benefits by providing strong links of native trees between existing woodlands and proposed shelterbelts. These new trees will also further enhance the east/west cover to enhance these green corridors.<br><br>The strengthening of the field boundaries with both the addition of new hedgerow planting and enhancement of existing hedges, will create additional ecological links and strengthen the character of the historical field pattern locally where this has been lost or eroded. Existing field boundaries will be allowed to grow out where these are currently managed as low hedges, being managed to a height of 5m. This, together with wide and varied grassland buffers to the base of existing and proposed vegetation where currently these are narrow, will create strong and resilient networks with much improved biodiversity value.<br><br>The planting of oak and birch within the tree belts will further reinforce the character of the local woodlands.<br><br>Opportunities exist to improve areas of covers and heathlands where these exist, through managed sheep grazing for short periods on rotation within the panelled areas would be explored where applicable.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and the varied grassland areas will have become established, starting to create valuable habitats.<br><br>Overall, this mitigation will help to link habitats and strengthen the overall character locally and maintain a sense of place. Important opportunities to bolster the local vegetation cover, buffering and connecting existing fragmented vegetation, aims towards creating a more resilient and biodiverse landscape.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Natural designations:<br>- Grassland reversion<br>- Increased woodland/vegetation cover<br>- A more varied landscape<br>- Improved management of exiting vegetation<br>- Less intensively managed land<br>- Soil improvements<br>- Water improvements<br>- Potential animal grazing<br>- Reinstatement of historic field patterns<br>- Bird mitigation fields<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture | Following mitigation, at Year 15, The existing woodland locally will be augmented by increased vegetation cover creating both visual and ecological links across the landscape to the adjoining woodland blocks. Grassland mixes will have established and will create valuable habitats with soil structure greatly improved through cessation of arable cultivation.<br>Following mitigation, the Cottam 1 Site/Sites are able accommodate change without undue adverse effects and there will be considerable beneficial effects in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area.<br><br>**Overall,** in terms of mitigation for the Cottam 1 Site/ Sites, due to the loss of habitats that would have been more widespread in this locality, the aim is to maintain underlying geological conditions that support the range of species. Other aims would look to secure associated benefits, for example there are woodlands associated with Ancient Woodland that are 'secondary' in nature, such as Oak Plantation that has developed from the more open structure of an historic heathland/common. There is also opportunity to manage rides and to increase open canopy woodland in some parts. Blocks of conifer plantation could also be made more diverse in species through silvicultural thinning and the establishment of more native broadleaves. Landscape scale projects such as those delivered by the Trent Vale Partnership, are working to enhance access, biodiversity, and the natural character of the River Trent's flood plain and other watercourses such as the River Till and their objectives could be built into overall mitigation measures. | |

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| | | - Green energy production<br><br>Adverse effects:<br>- Panels and structures across landscape<br>- Increased hard standing areas<br>- Potential minor pollution around substations<br>- Loss of food production<br>- Increased tracks around Sites<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Neutral & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Low | Low | Medium | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| **Landscape Receptor – Ancient Woodlands and Natural Designations (Cottam 1 Site/Sites)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 1 Site with the other Cumulative Sites (Cottam 2 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. The existing landscape character associated with these Cumulative Sites and Study Area would predominantly provide tree cover along the hedge lines and their margins with a change to grassland with scattered trees, which would give rise to overall benefits to landscape character.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in Ancient Woodlands and Natural Designations or features of the landscape within Cottam 1. The landscape is shaped by the rich geodiversity, however the predominant use of the land for agriculture means that very little semi-natural habitat remains across the area. Changes to morphological and hydraulic characteristics have affected species abundance and decreased the range of population of some species. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the landscape context of these ancient woodlands and natural designations with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in Ancient Woodlands and Natural Designations or features of the landscape within Cottam 1. The landscape is shaped by |

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| | There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam Power Station and the Cottam 1 Site/Sites and extending between the Cottam 1 Site/Sites and the Cottam 2 Site (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.1 [C6.4.8.15.1.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the Cable Route Corridor, Cottam 2 Site, and Cottam 3a and 3b Sites and the Cable Routes Corridor would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these cumulative sites and the Cable Route Corridors.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites and the Cottam 2 Site, located to the:<br>• east of Upton and to the south of Sturgate Airfield<br>• south of Kexby in the locality of Valley Farm<br>• east of Willingham by Stow in the locality of the residential property known as Carisbrooke<br>• east of Stow, just to the east of the property known as Tam Howes; and<br>• west of Sturton by Stow, extending from West Syke Lane as far as Normanby by Stow.<br><br>The Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2 Site, and Cottam 3a Site, located to the:<br>• northeast of Sturton by Stow, extending between Tillbridge Road and Ingham Road.<br><br>The Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>• northeast of Sturton by Stow, extending between School Lane Farm and Ingham Road.<br><br>The Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>There are local patches of intervisibility between All Sites comprising the landscape to the:<br>• east boundary of the Cottam 1 North Site, extending from Glentworth in the north as far as Ingham in the south.<br><br>The Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the National and Locally Designated Landscape*<br>Overall, the character of the landscape and the Ancient Woodlands and Natural Designations is shaped by the broadleaved woodlands, copses and networks of hedgerows provide important habitats for farmland species. The network of woodlands to the west of Cammeringham and Brattleby are notable and a further network to the north of Coates. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not | by the rich geodiversity, however the predominant use of the land for agriculture means that very little semi-natural habitat remains across the area. Changes to morphological and hydraulic characteristics have affected species abundance and decreased the range of population of some species.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and Cable Route Corridor extending between the Cottam Power Station and the Cottam 1 Site/Sites and extending between the Cottam 1 Site/sites and Cottam 2 Site (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cotton 1 Site/Sites and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 1, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, and where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 1 Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 1 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.<br><br>*Overall Character of the National and Locally Designated Landscape*<br>Overall, the character of the landscape and the Ancient Woodlands and Natural Designations is shaped by the broadleaved woodlands, copses and networks of hedgerows provide important habitats for farmland species. The network of woodlands to the west of Cammeringham and Brattleby are notable and a further network to the north of Coates. These relevant characteristics of the landscape have some ability to |

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| | alter the overall character of the landscape. Moreover, these Ancient Woodlands and Natural Designations play a positive role in reducing the overall cumulative effects across the landscape.<br><br>The landscape works provided in association with the Sites (such as improvements to existing vegetation and provision of new hedgerows and trees) will be beneficial to the existing situation by the creation of improved connectivity, | accommodate change without undue adverse effects. The cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape. Moreover, these Ancient Woodlands and Natural Designations play a positive role in reducing the overall cumulative effects across the landscape. |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

**Landscape Receptor – Ancient Woodlands and Natural Designations (Cottam 2 Site)**

**Receptor Baseline:**
Within the Cottam 2 Site, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends across the entirety of the 2km Study Area and then extends into the 5km Study Area where at its eastern most edge it shares a boundary with RLCT Profile: 6a Limestone Scarps and Dipslopes. The western extent of the 5km Study Area is also host to a large part of RLCT Profile: 4b Wooded Vales.

The landscape is characterized by the dynamic broad valley of the River Trent which is bordered by large urban areas including the cities of Nottingham and Lincoln connected by a strategic road network in a mostly north south direction. There are also scattered rural settlements perched on the edge of the floodplain that are linked by a smaller network of minor roads and local lanes which generally follow an east west alignment.

There are no Ancient Woodlands, Local Nature Reserves, Local Wildlife Sites or Sites of Special Scientific Interest within the Cottam 2 Site (2km Study Area).

**Key Features:**

Ancient Woodlands: The closest Ancient Woodland is Birch Wood (Index MLI50657) to the west close to and within Gainsborough. The woodland is mainly classified as semi-natural with the remaining 4 hectares as plantation and forms a strong group with other woodlands surrounding Karston Lakes Golf Course, such as Wharton Wood to the north and Hornby and Somerby Wood to the south. Wharton Wood (Index MLI50656) is mainly classified as semi- natural and shares its southern boundary with the lake at Corringham Scroggs. Other woodlands include White's Wood (MLI50649), Bass Wood with Park Springs Wood (MLI50652), Lea Wood (MLI50648), Warren Wood (MLI50647), Willoughton Wood (MLI50654) and Thurlby and Caistor Woods (MLI50653). There are no Ancient Woodlands to the east of the 5km Study Area or outside of it in that direction.

Local Nature Reserves (LNRs): The closest Local Nature Reserve is located to the north-west (approximately 5.2km) at Owlet Plantation, just to the west of Blyton. The woodland comprises birch, oak and pine interspersed among open heathland and also supports an important diversity of invertebrates. Remnants of the heathland are still evident, and they form part of the Coversands Heathland. There is good public access over most of the site due to the extensive footpath network which is dry all year due to the sandy soil.

Local Wildlife Sites (LWSs): The closest Local Wildlife Sites are located in close proximity to the Cottam 1 Site/Sites and not the Cottam 2 Site. The Willingham to Fillingham Road Verges LWS is located adjacent to the boundary of the Cottam 1 North Site. This is a 3 – 3.5m wide roadside verge where the main habitats are calcareous grassland and neutral grassland (unimproved,semi-improved). Additional habitats include coarse grassland, species rich hedgerow and ditches. There are two other sites separated from the Cottam 1 Site/Sites by approximately 165m and 1.1km respectively. These LWSs are present due to the network of quiet lanes that lead to the villages, especially where they are associated with the watercourses such as the crossings of the River Till and its associated tributaries, otherwise the floodplain grazing marsh is the most extensive semi-natural habitat focused along the Trent. Where woodland cover is limited, these watercourses and quiet lanes provide an important substitute woodland and woodland edge habitat as well as being significant linear features in the landscape.

Site of Specific Scientific Interest (SSSI's): The closest SSSIs are located at Laughton Common, Scotton and Laughton Forest Ponds, Scotton Beck Fields, Scotton Common and Tuetoes Hill SSSIs, situated to the north and north-west of the boundary of the Cottam 2 Site outside the 5km Study Area. Laughton Common SSSI comprises lowland acid grassland, dune, and heath habitat. Scotton and Laughton Forest Ponds SSSI comprises peaty heathland pools with open acid grassland and botanically important mire habitats. Scotton Beck Fields SSSI comprises unimproved acidic grassland and heathland botanical communities. Scotton Common SSSI is a rare example of a lowland heathland in Lincolnshire, supporting common lizard, adder, scarce plants, and rare moths and Tuetoes Hill SSSI is an important mosaic of dry acid grassland including dune grassland.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
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| In terms of forces for change for the Cottam 2 Site (Natural Designations), recent trends have shown that changes in soils structure and water table levels through agricultural activity has modified habitats. However, the woodlands that are least modified in the area are formed on the historic heath at Morton and Laughton Commons. Other factors causing change to habitats has been animal grazing, although cessation has been leading to a succession from heathland to woodland. Sycamore regeneration, aged tree stock and tree disease are also key factors in terms of landscape change and the high volume of dog walkers is also a consideration.<br>The change in habitat types is also conditioned by the use of agricultural sprays that has led to the encouragement of vigorous grasses as is evident at the Willingham to Fillingham Road Verges LWS. The heavy mowing of verges close to residential properties is also a concern in terms of change and interpretation/awareness raising could be considered.<br><br>**Overall,** the susceptibility of the Natural Designations for the Cottam 2 Site is conditioned by the changes to the underlying geology and drainage patterns by intensive agriculture. The presence of the north south road network also severs habitat connectivity between the Trent's flood plain and the Till Vale to the east. The A156 is a major route that divides the Trent flood plain. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects. There is scope to protect and enhance the natural character of the minor east west local road network to improve connectivity between the Till Vale and the Trent across major routes such as the A156 (Gainsborough Road). Minor roads that lead to the Trent from the A156 could be a key priority to build on connectivity. | *Scenic:* This includes the complex range of sites that form part of Laughton Woods and Scotton Common which are large, contiguous Forestry Commission woodland sites which contain important habitats.<br><br>*Cultural:* The underlying geological conditions that support the range of species is the key cultural focus.<br><br>*Natural:* The habitats at Laughton Woods and Scotton Common support a range of habitats including heathland, wetland, grassland, and woodland for protected species such as reptiles, invertebrates, birds, and plant species.<br><br>*Recreation and Enjoyment:* The local road network provides access for recreation; however, the mown grass verges detract from the natural character of the area.<br><br>*Local Distinctiveness and Sense of Place:* The presence of the east west road network creates a local distinctiveness and the right-angled bends in them offer a more natural 'sense of place'.<br><br>*Health and Wellbeing:* The natural character of the local road network enhances a strong feeling of health and wellbeing.<br><br>*Important Spatial Function:* Because of the fertilizer inputs, the main surviving areas of semi-natural habitat tend to be confined to the floodplain grazing marsh and sites such as Lea Marsh SSSI.<br><br>**Overall,** the value of the Natural Designations for the Cottam 2 Site is shaped by the agricultural activity that has modified habitats. However, the woodlands that are least modified in the area are formed on the historic heath at Morton and Laughton Commons. The natural character of the local road network is also a key feature that offers scope to improve habitat connectivity between the Till Vale and the Trent flood plain. | *Character:* This is shaped by the complex range of sites that form part of Laughton Woods and Scotton Common which are large, contiguous Forestry Commission woodland sites which contain important habitats.<br><br>*Quality:* The habitats at Laughton Woods and Scotton Common support a range of habitats including heathland, wetland, grassland, and woodland for protected species such as reptiles, invertebrates, birds, and plant species.<br><br>*Value:* The natural character of the local road network is a key feature that offers scope to improve habitat connectivity between the Till Vale and the Trent flood plain.<br><br>*Capacity:* Although the remaining hedgerow network is generally strong, there is nevertheless evidence of decline in several areas, with gaps and few hedgerow trees leaving the landscape vulnerable to change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set back 20m from existing woodlands with an ecological buffer between.<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium (Site/Sites) | Medium (Site/Sites) | **Medium** | |

| Landscape Receptor – Ancient Woodlands and Natural Designations (Cottam 2 Site) | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited and would not affect the integrity of woodlands or other designated receptors.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites creating a much greater level of vegetation locally, creating many associated beneficial effects. There may be very minor removal of sections of hedgerow around access roads for visibility purposes.<br><br>These short-lived construction activities would not adversely | Designations lie predominantly to the west/southwest of both the Cottam 2 Site with Ancient Woodland, Local Nature Reserves and Local Wildlife Sites within the study area but having no physical or visual impact/influence on the Site other than distant views where these may exist. Opportunities for reinforcement of the character area are available.<br><br>The Site lies just beyond the outer limits of the SSSI's impact risk zones of all neighbouring SSSIs. Reversion of arable farmland to varied pasture within the Site(s) provides opportunities for some natural regeneration and improved biodiversity and potential wildlife links.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following changes to the landscape:<br><br>Wildflower meadow mix to be sown beneath proposed panels.<br><br>Existing hedgerows to be allowed to grow out and managed to a height of 5m with additional trees added. New hedgerows with hedgerow trees planted along roadsides where none exist.<br><br>Within the Cottam 2 Site, reinforcement of the character includes linear bands of scattered trees to the east of the Site along the Yawthorpe Beck. This belt will enhance the character of the river corridor with a strong vertical feature together with a 10m wide tall herb mix to enhance its setting in both visual and ecological terms. The reduction in agricultural sprays will both enhance water quality and suppress vigorous grasses to all areas but particularly around existing watercourses.<br><br>Existing ponds within the Site are retained and enhanced with proposed native shrub planting creating a strong buffer to these landscape elements.<br><br>A small woodland to the southeast of the Cottam 2 Site is proposed where several trees exist, helping to bolster the level of woodland cover locally and linking to existing landscape features through enhanced hedgerows around existing field boundaries.<br><br>The strengthening of the east/west boundaries across the Site will help to reconnect the Trent Flood Plain with the Till Vale to the east.<br><br>The addition of irregularly spaced hedgerow trees across the Cottam 2 Site/Sites will help increase the tree cover locally and create additional biodiversity benefits by creating strong links of native trees between existing woodlands and proposed shelterbelts.<br><br>The strengthening of the field boundaries with both the addition of new hedgerow planting and enhancement of existing hedges, will create additional ecological links and strengthen the character of the historical field pattern locally where this has been lost or eroded. Existing field boundaries will be allowed to grow out where these are currently managed as low hedges, being managed to a height of 5m. This, together with wide and varied grassland buffers to the base of existing and proposed vegetation where currently these are narrow, will create strong and resilient networks with much improved biodiversity value. The use of flower rich pollinator mixes where appropriate on boundaries will add considerably to the biodiversity of the Site which has been much degraded by agricultural intensification. | The residual effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the visual effects are set out below.<br><br>Views to the north, south, east, and west of the Cottam 2 Site/Sites will be screened in the close-mid range proximity due to the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining and enhancing the overall character of the area.<br><br>The proposed grassland will have established and will have settled into its natural scheme with some minor appropriate management of differing regimes. The soil quality will be considerably improved through the lack of cultivation and the chemical run-off will be reduced around the Site(s) enhancing the water quality generally. There will be considerable biodiversity gains through the establishment of the varied grassland types and regimes and a long-term increase in pollinator species and bird and other species and numbers locally.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>Following mitigation, at Year 15, The existing woodland locally will be augmented by increased vegetation cover creating both | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area.<br><br>**Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been |

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| | affect the local woodlands, existing vegetation, or designated areas. There would be a change to the arable land use which will be beneficial to soils and watercourses, significantly increase biodiversity and help to capture carbon. The field boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new panels. There would be no adverse changes to the woodlands or vegetation with buffer planting implemented around these, further protecting these assets.<br><br>Overall, the local woodland and other vegetated cover, both within the Site and of the wider area, is able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all features will be retained and enhancement at ground level through initial grassland planting will have beneficial effects from the outset. | Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and the varied grassland areas will have become established, starting to create valuable habitats.<br><br>Overall, this will help to link habitats and strengthen the overall character locally and maintain a sense of place. Important opportunities to bolster the local vegetation cover, buffering and connecting existing fragmented vegetation, aims to create a more resilient and biodiverse landscape.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Natural designations:<br>- Grassland reversion<br>- Increased woodland/vegetation cover<br>- A more varied landscape<br>- Improved management of exiting vegetation<br>- Less intensively managed land<br>- Soil improvements<br>- Water improvements<br>- Potential animal grazing<br>- Reinstatement of historic field patterns<br>- Bird mitigation fields<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Green energy production<br><br>Adverse effects:<br>- Panels and structures across landscape<br>- Increased hard standing areas<br>- Potential minor pollution around substations<br>- Loss of food production<br>- Increased tracks around Sites<br><br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | visual and ecological links across the landscape to the adjoining woodland blocks. Grassland mixes will have established and will create valuable habitats with soil structure greatly improved through cessation of arable cultivation.<br><br>Following mitigation, the Site is able accommodate change without undue adverse effects and there will be considerable beneficial effects in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area.<br><br>**Overall,** in terms of mitigation for the Cottam 2 Site, due to the loss of habitats that would have been more widespread in this locality, landscape scale projects such as those delivered by the Trent Vale Partnership, are working to enhance access, biodiversity, and the natural character of the River Trent's flood plain and other watercourses such as the River Till and its tributaries. The aim is also to focus on the woodland cover, in particular the woodlands that are 'secondary' in nature to the Ancient Woodlands, such as Oak Plantation that has developed from the more open structure of an historic heathland/common. There is also opportunity to manage rides and to increase open canopy woodland in some parts. Blocks of conifer plantation could also be made more diverse in species through silvicultural thinning and the establishment of more native broadleaves. | managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long-term landscape and visual effects of this mitigation. |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Neutral & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Low | Low | Medium | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| Landscape Receptor – Ancient Woodlands and Natural Designations (Cottam 2 Site) | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 2 Site with the other Cumulative Sites (Cottam 1 and 3a and 3b) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. The existing landscape character associated with these Cumulative Sites and Study Area would predominantly provide tree cover along the hedge lines and their margins with a change to grassland with scattered trees, which would give rise to overall benefits to landscape character.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the Ancient Woodlands and Natural Designations within Cottam 2. The landscape is shaped by the agricultural activity that has modified habitats. However, the woodlands that are least modified in the area are formed on the historic heath at Morton and Laughton Commons. The natural character of the local road network is also a key feature that offers scope to improve habitat connectivity between the Till Vale and the Trent flood plain.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.2 [C6.4.8.15.1.2]** which shows that with the Cottam 2 Site, cumulative visibility with the Cottam 1 Site/Sites and Cottam 3a and 3b Sites would not be experienced across the entirety of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of intervisibility between the Cottam 2 Site and with the 3a and Cottam 3b Site extending from the:<br>• South boundary of the Cottam 2 Site, starting at the eastern edge of Corringham and reaching as far as Yawthorpe Beck and Yawthorpe<br>• West boundary of the Cottam 2 Site, extending as far as Pilham Lane<br>• East boundary of the Cottam 2 Site, extending as far Yawthorpe and Yawthorpe Fox Covert<br>• Northwest boundary of the Cottam 2 Site, extending as far as the Cottam 3a and 3b Sites.<br><br>The Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>There is a local patch of intervisibility between the Cottam 2 Site and with the Cottam 3b Site, comprising the:<br>• Northern-most tip of the Cottam 2 Site extending across the medieval village of Dunstall as far as the medieval village of Southorpe; and<br>• Southeast of the River Eau, extending as far as Huckerby Farm and Huckerby Bungalows.<br><br>The Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>There are local patches of intervisibility between All Sites comprising the:<br>• North of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe<br>• West of the settlement of Corringham, extending from Staplegate House as far Windy Ridge on Pilham Lane | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the landscape context of these ancient woodlands and natural designations with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the Ancient Woodlands and Natural Designations within Cottam 2. The landscape is shaped by the agricultural activity that has modified habitats. However, the woodlands that are least modified in the area are formed on the historic heath at Morton and Laughton Commons. The natural character of the local road network is also a key feature that offers scope to improve habitat connectivity between the Till Vale and the Trent flood plain.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.2 [C6.4.8.15.2.2]** which shows that with the Cottam 2 Site, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 2 Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 2, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 2 Site, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 2 Site where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.<br><br>*Overall Character of the Ancient Woodlands and Natural Designations* |

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| | • West of Springthorpe, extending across the landscape as far as Harpswell Low Farm; and<br>• East of Yawthorpe, extending as far as Hemswell.<br><br>The Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Ancient Woodlands and Natural Designations*<br>Overall, the character of the landscape and the Ancient Woodlands and Natural Designations is shaped by the natural character of the local road network that is a key feature and offers scope to improve habitat connectivity between the Till Vale and the Trent flood plain. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its Locally Designated features. Moreover, these Ancient Woodlands and Natural Designations can play a positive role in reducing the overall cumulative effects across the landscape.<br><br>The landscape works provided in association with the Sites (such as improvements to existing vegetation and provision of new hedgerows and trees) will be beneficial to the existing situation by the creation of improved connectivity, | Overall, the character of the landscape and the Ancient Woodlands and Natural Designations is shaped by the natural character of the local road network that is a key feature and offers scope to improve habitat connectivity between the Till Vale and the Trent flood plain. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape and its Locally Designated features. Moreover, these Ancient Woodlands and Natural Designations can play a positive role in reducing the overall cumulative effects across the landscape. |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under panelled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

**Landscape Receptor – Ancient Woodlands and Natural Designations (Cottam 3a and 3b Sites)**

**Receptor Baseline:**
Within the Cottam 3a and 3b Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales is located within the 2km Study Area, but only extending across its eastern most part, then sharing the western most part with RLCT Profile 4b: Wooded Vales. The landscape character type then occupies an eastern part of the 5km Study Area where it shares a boundary with Kirton in Lindsey. The western part of the 5km Study Area then comprises of a mixture of RLCT 2b: Planned and Drained Fens and Carrlands, RLCT 4a: Unwooded Vales and RLCT 4b: Wooded Vales, The Unwooded Vales is generally characterised by mixed agriculture set within an enclosed landscape of low, well-maintained hedgerows.

The Cottam 3 Site can be sub-divided into two distinct land areas.

- Cottam 3a
- Cottam 3b

There are no Ancient Woodlands, Local Nature Reserves, Local Wildlife Sites or Sites of Special Scientific Interest (SSSI) within the Cottam 3a and 3b Site (2km Study Area). There are however two Sites of Special Scientific Interest (SSSI) and Local Nature Reserves located within the Cottam 3a Site (2km radius).

**Key Features:**

Ancient Woodlands: The closest Ancient Woodland is Wharton Wood (Index MLI50656) that is mainly classified as semi- natural and shares its southern boundary with the lake at Corringham Scroggs. Other woodlands include White's Wood (MLI50649), Bass Wood with Park Springs Wood (MLI50652), Lea Wood (MLI50648), Warren Wood (MLI50647), Willoughton Wood (MLI50654) and Thurlby and Caistor Woods (MLI50653). There are no Ancient Woodlands to the east of the 5km Study Area or outside of it in that direction. Birch Wood (Index MLI50657) also lies to the west close to and within Gainsborough. The woodland is mainly classified as semi-natural with the remaining 4 hectares as plantation and forms a strong group with other woodlands surrounding Karston Lakes Golf Course, such as Wharton Wood to the north and Hornby and Somerby Wood to the south.

Local Nature Reserves (LNRs): The closest Local Nature Reserve is located to the north-west (approximately 5.2km) at Owlet Plantation, just to the west of Blyton. The woodland comprises birch, oak and pine interspersed among open heathland and also supports an important diversity of invertebrates. Remnants of the heathland are still evident, and they form part of the Coversands Heathland. There is good public access over most of the site due to the extensive footpath network which is dry all year due to the sandy soil.

Local Wildlife Sites (LWSs): The closest Local Nature Reserve is located to the north-west (approximately 2.7km) at Owlet Plantation, just to the west of Blyton. The woodland comprises birch, oak and pine interspersed among open heathland and also supports an important diversity of invertebrates. Remnants of the heathland are still evident, and they form part of the Coversands Heathland. There is good public access over most of the site due to the extensive footpath network which is dry all year due to the sandy soil.

Sites of Special Scientific Interest (SSSIs):
The closest SSSI is Scotton Common, located around 1.5km from the Cottam 3a Site and Scotton Beck Fields. According to the Natural England, Scotton Beck Fields covers abound 16 hectares with Scotton Common being slightly smaller, covering around 15ha. Scotton Beck Fields comprises an area of unimproved acidic grassland and heathland botanical communities and in contrast, Scotton Common comprises rare examples of lowland heathland, which supports common lizard, adder, scarce plants, and rare moths. Within the 5km radius of the Cottam 3a and 3b Sites there are a further three SSSIs, which include Scotton, and Laughton Forest Ponds (SSSI) located with the Scotton Common woods, and approximately 2.5km north of the Cottam 3a and 3b Sites. Scotton and Laughton Forest Ponds SSSI comprises peaty heathland pools with open acid grassland and botanically important mire habitats. Laughton Common (part of Peacock Wood and Carmer Wood) is located just over 2km north-west of the Cottam 3a Site and Laughton Common SSSI lies just outside the 2km radius to the northwest of the Cottam 3a Site. Laughton Common SSSI comprises lowland acid grassland, dune, and heath habitat.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change for the Cottam 3a and 3b Sites (Natural Designations), recent trends have shown that the management of the oak/birch woodlands are at risk from unsound management and their biodiversity interest could be improved by encouraging natural regeneration of native broadleaved species where possible. Th open character of the limestone plateau is also at risk and any redevelopment of the airfields should take account of this feature including protecting any features of historic interest. The condition of the Coversand Heathlands have also deteriorated through a lack of grazing.<br><br>**Overall**, the susceptibility of the Natural Designations for Cottam is conditioned by the areas of broadleaved woodland that is important to landscape character, but often small and fragmented and bolstered by the intervening shelterbelts and hedgerow networks. Expanding, buffering and connecting the fragmented semi-natural habitats would improve their condition and make them more resilient. There is scope for extending access and interpretation of these many features to improve understanding and increase enjoyment of them. The relevant characteristics of the landscape therefore have some ability to accommodate change without undue adverse effects. There is scope to maintain the sense of place and the diversity of the settlements and landscape features through expanding and managing semi-natural habitats and providing more interpretation and access through good green infrastructure links. | *Scenic:* The fragmented woodlands are distinctive as visual features in the landscape, and where this is not in conflict with priority habitats of heathland, acid, and calcareous grassland they could be enhanced around their edges to create an improved transition with their landscape setting.<br><br>*Cultural:* The inland dune systems of Coversands along with the shelterbelts of pines are a key feature along with oak/birch woodland which creates a mosaic across the landscape. Many of these areas are SSSIs such as Laughton Wood and Scotton Common.<br><br>*Natural:* The network of hedgerows and species rich permanent grass margins within the farmland have the scope to enhance the connections between semi-natural habitats to enable species movement.<br><br>*Recreation and Enjoyment:* The area offers locations to watch the Red Arrows in practice in the context of a wider, distinctive natural environment which adds to the sense of inspiration.<br><br>*Local Distinctiveness and Sense of Place:* Access to the viewpoints provides opportunities for people to enjoy long-distance views from the top of the Cliff over the Till Vale and towards Lincoln Cathedral.<br><br>*Health and Wellbeing:* Routes for walkers, cyclists and horse riders are key as well as finding links with existing accessible sites and semi-natural habitats, especially woodlands.<br><br>*Important Spatial Function:* The wide road verges add to the structural and spatial diversity of the landscape and also contribute to the network of linked semi-natural habitats across the area.<br><br>**Overall**, the value of the Natural Designations for the Cottam 3a and 3b Sites is shaped by the areas of broadleaved woodland that are often small and fragmented, but on a whole help bolster the presence of tree cover in combination with the intervening shelterbelts and hedgerow networks. Coversand heathlands support nationally rare and important species and create a mosaic across the landscape, and several are designated as SSSI. There is very little Ancient Woodland, but where oak/birch woodland has formed this should be given priority as a feature for enhancement and restoration. | *Character:* The fragmented woodlands are distinctive as visual features in the landscape along with the network of hedgerows and species rich permanent grass margins within the farmland.<br><br>*Quality:* The wide road verges add to the structural and spatial diversity of the landscape and also contribute to the network of linked semi-natural habitats across the area and add to the quality of the landscape.<br><br>*Value:* Areas have a positive landscape character but include some areas of degradation where agricultural intensification has eroded landscape character, particularly around the edges of settlements.<br><br>*Capacity:* The landscape benefits from high levels of visual containment due to the local landform, hedgerows, and shelter belts. The areas of broadleaved woodland that is important to landscape character, but often small and fragmented and bolstered by the intervening shelterbelts and hedgerow networks. The tolerance for landscape change is affected by the potential connectivity between these features. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set back 20m from existing woodlands with an ecological buffer between.<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium (Site/Sites) | Medium (Site/Sites) | **Medium** | |

| Landscape Receptor – Ancient Woodlands and Natural Designations (Cottam 3a and 3b Sites) | | | | |
|---|---|---|---|---|
| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground, and lower-level activities such as the construction of the solar panel areas and associated infrastructure and inverters would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited and would not affect the integrity of woodlands or other designated receptors.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites creating a much greater level of vegetation locally, creating many associated beneficial effects.<br><br>These short-lived construction activities would not adversely affect the local woodlands, existing vegetation, or designated areas. There would be a change to the arable land | Designations lie predominantly to the west/southwest of both the Cottam 3a and 3b Sites with Ancient Woodland, Local Nature Reserves and Local Wildlife Sites within the study area but having no physical or visual impact/influence on the Site(s) other than distant views where these may exist. Opportunities for reinforcement of the character area within both the Cottam 3a and 3b Sites are available.<br><br>Both Sites lie on the outer limits of the SSSI's impact risk zones of Scotton Becks Fields and Scotton Common. Reversion of arable farmland to varied pasture within the Site(s) provides opportunities for some natural regeneration and improved biodiversity and potential wildlife links.<br><br>Secondary mitigation such as planting, and grass seeding would be taken into account at this stage to include the following changes to the landscape:<br><br>Within the Cottam 3a Site reinforcement of the character includes linear bands of scattered trees to the west together with successional scrub around existing vegetation in the west, south and east.<br><br>Within the Cottam 3b Site these include considerable strengthening of the north/south field patterns across the Site with both new and enhanced hedgerow planting and management. An additional new hedgerow across the Site adjacent to the PRoW will create a strong east/west link, reinforcing both the visual and physical elements along this open area.<br><br>The addition of irregularly spaced hedgerow trees across the Site(s) will help increase the tree cover locally and create additional biodiversity benefits by creating strong links of native trees between existing woodlands and proposed shelterbelts.<br><br>Successional scrub around the existing railway line vegetation will reinforce this linear feature, create strong green infrastructure links.<br><br>The strengthening of the field boundaries with both the addition of new hedgerow planting and enhancement of existing hedges, particularly around the existing remnant airfield, will create additional ecological links and strengthen the character of the historical field pattern locally where this has been lost or eroded. Existing field boundaries will be allowed to grow out where these are currently managed as low hedges, being managed to a height of 5m. This, together with wide and varied grassland buffers to the base of existing and proposed vegetation where currently these are narrow, will create strong and resilient networks with much improved biodiversity value.<br><br>The planting of oak and birch within the tree belts will further reinforce the character of the local woodlands locally.<br><br>Opportunities exist to improve areas of coversand heathlands where these exist, through managed sheep grazing for short periods on rotation within the panelled areas.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and the varied grassland areas will have become established, starting to create valuable habitats. | The effects at the Operational Phase at Year 15 **without** Mitigation equate to those effects at the beginning of Year 1 before any secondary mitigation has been applied. Mitigation embedded in the design will apply as will the growing out of the existing hedges.<br><br>With secondary mitigation such as planting and grass seeding being taken into account at the operational stage (Year 15) the following changes to the landscape would occur and the effects are set out below.<br><br>Views to the north, south, east, and west of the Cottam 3a and 3b Site/Sites will be screened in the close-mid range proximity due to the new hedgerow and shelterbelt planting and the enhancement of existing hedges which will be managed to a height of 5m. These new and augmented hedgerows will provide a series of good quality field boundaries both formally strengthening the existing and historical field pattern and creating a multi-layered landscape. Scattered tree belts will follow the routes of existing watercourses, strengthening their visibility in the wider landscape. Views of the longer distance, where hedgerows do not block these, will be of a layered, well treed landscape with a backdrop of some wooded vegetation in places on the horizon. Both new and existing vegetation will have established and begun to mature, creating a much stronger structure to the landscape, and retaining and enhancing the overall character of the area.<br><br>The proposed grassland will have established and will have settled into its natural scheme with some minor appropriate management of differing regimes. The soil quality will be considerably improved through the lack of cultivation and the chemical run-off will be reduced around the Site(s) enhancing the water quality generally. There will be considerable biodiversity gains through the establishment of the varied grassland types and regimes and a long-term increase in pollinator species and bird and other species and numbers locally.<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>Following mitigation, at Year 15, The existing woodland locally will be augmented by increased vegetation cover creating both visual and ecological links across the landscape to the adjoining woodland blocks. Grassland mixes will have established and will create valuable habitats with soil structure greatly improved through cessation of arable cultivation.<br><br>Following mitigation, the Site(s) are able accommodate change without undue adverse effects and there will be considerable beneficial effects in | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields and wetland grazing marshes are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area. |

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| | use which will be beneficial to soils and watercourses, significantly increase biodiversity and help to capture carbon. The field boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new panels. There would be no adverse changes to the woodlands or vegetation with buffer planting implemented around these, further protecting these assets.<br><br>Overall, the local woodland and other vegetated cover, both within the Site and of the wider area, is able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all features will be retained and enhancement at ground level through initial grassland planting will have beneficial effects from the outset. | Overall, this will help to link habitats and strengthen the overall character locally and maintain a sense of place. Important opportunities to bolster the local vegetation cover, buffering and connecting existing fragmented vegetation, aims to create a more resilient and biodiverse landscape.<br><br>Between Years 1 and 15, the following beneficial effects will be achieved in terms of Natural designations:<br>- Grassland reversion<br>- Increased woodland/vegetation cover<br>- A more varied landscape<br>- Improved management of exiting vegetation<br>- Less intensively managed land<br>- Soil improvements<br>- Water improvements<br>- Potential animal grazing<br>- Reinstatement of historic field patterns<br>- Bird mitigation fields<br>- Significantly improved biodiversity<br>- Improved carbon retention/capture<br>- Green energy production<br><br>Adverse effects:<br>- Panels and structures across landscape<br>- Increased hard standing areas<br>- Potential minor pollution around substations<br>- Loss of food production<br>- Increased tracks around Sites<br>-<br>The effects at the Operational Phase at Year 15 without Embedded Mitigation equate to those effects at the beginning of Year 1 before secondary mitigation has been applied. The Effects set out below include secondary mitigation which will have been carried out but will have had limited physical impact at this stage. | the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area.<br><br>**Overall,** in terms of mitigation for the Cottam 3a and 3b Sites, due to the loss of habitats that would have been more widespread in this locality, the aim is establish networks of linking habitats to strengthen landscape character. There are few watercourses on the plateau and so the aim is also to manage, where feasible, land adjacent to wetland habitats and wet woodland to buffer them and maintain their hydrology, thus retaining them as landscape features and enhancing their biodiversity interest. The aim is also to find further new uses for disused airfields. | **Without** Secondary Mitigation having been applied throughout the scheme, the only change to the views/landscape following decommissioning would be the existing hedgerows which will have been allowed to grow out and will have been managed to a height of 5m. It is assumed that these will be retained.<br><br>**With** Mitigation, the negative effects of the physical decommissioning will be balanced out by the long term landscape and visual effects of this mitigation. |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Neutral & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |
| **Site/Sites and Cable Route Corridor:** | | | | |
| **Magnitude** | Low | Low | Medium | Very Low |
| **Level of Effect** | Adverse & Short Term | Beneficial & Long Term | Beneficial & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Minor **Not Significant** | Moderate **Significant** | Negligible **Not Significant** |

| Landscape Receptor – Ancient Woodlands and Natural Designations (Cottam 3a and 3b Sites) | | |
|---|---|---|
| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects of the Cottam 3a and 3b Sites with the other Cumulative Sites (Cottam 1 and 2) is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact as a result of the low-level nature of the Scheme together with the quantum of mitigation. The existing landscape character associated with these Cumulative Sites and Study Area would predominantly provide tree cover along the hedge lines and their margins with a change to grassland with scattered trees, which would give rise to overall benefits to landscape character.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the Ancient Woodlands and Natural Designations within Cottam 3a and 3b. The landscape is shaped by the strong presence of agriculture and there is very little Ancient Woodland, but where oak/birch woodland has formed this should be given priority as a feature for enhancement and restoration.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a Site, cumulative visibility with the Cottam 1 Site/Sites, Cottam 2 Site and Cottam 3b Site would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of intervisibility between Cottam 3a and 3b Site/Sites, extending from the:<br>• Northeast boundary of the Cottam 3a Site/Sites, defined to the west by the Green Respect Burial Park and Park House Farm, and reaching as far as Northorpe in the east<br>• East boundary of Cottam 3a Site/Sites, and stopping short of Cold Harbour Farm; and<br>• North boundary of the Cottam 3b Site/Sites, extending for a short distance as far as Grange Farm and Top Farm.<br><br>The Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>There are local patches of intervisibility between the Cottam 3a, 3b and Cottam 2 Sites, extending from the:<br>• South boundary of the Cottam 3b Site, bordered by Pilham to the west and the medieval settlement of Dunstall to the east, and reaching as far as Springthorpe in the south<br>• South boundary of the Cottam 3a Site, bordered by the eastern edge of Blyton to the west, reaching Grange Farm and stopping short of the mainline railway; and<br>• North boundary of the Cottam 3a Site, following the alignment of the A159 (Laughton Road) and stopping short to the west of the Green Respect Burial Park.<br><br>The Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>There is a local patch of intervisibility between All Sites, located to the:<br>• East of the Cottam 3b Site and north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe. | *In Summary*<br>The Cumulative Effects of the Scheme with the other Cumulative Developments is Minor with the Tillbridge Development and adverse, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. This betterment is due to the low-level nature of the Scheme, together with the improvements to the landscape context of these ancient woodlands and natural designations with new hedgerows and tree planting, giving rise to the vegetative layering of the landscape across the Sites and Study Area, all in helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the Ancient Woodlands and Natural Designations within Cottam 3a and 3b. The landscape is shaped by the strong presence of agriculture and there is very little Ancient Woodland, but where oak/birch woodland has formed this should be given priority as a feature for enhancement and restoration.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a and 3b Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 3a Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of Cottam 3a and 3b, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 3a and 3b Sites, where their boundaries' are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the settlements. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) of the watercousres across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam 3a and 3b Sites where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, where their presence will impair any associated landscape context with the West Burton Site**.**<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.<br><br>*Overall Character of the Ancient Woodlands and Natural Designations*<br>Overall, the character of the landscape and the Ancient Woodlands and Natural Designations is shaped by the fragmented woodlands that are distinctive as visual features in the landscape, and where this is not in conflict with priority habitats of heathland, acid and calcareous grassland they could be enhanced around their edges to create an |

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| | The Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual ProW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Ancient Woodlands and Natural Designations*<br>Overall, the character of the landscape and the Ancient Woodlands and Natural Designations is shaped by the fragmented woodlands that are distinctive as visual features in the landscape, and where this is not in conflict with priority habitats of heathland, acid and calcareous grassland they could be enhanced around their edges to create an improved transition with their landscape setting. The cumulative visibility for the Cottam 3a and 3b Sites would not alter the overall character of the landscape and its Ancient Woodlands and Natural Designations. Moreover, these Ancient Woodlands and Natural Designations can play a positive role in reducing the overall cumulative effects across the landscape.<br><br>The landscape works provided in association with the Sites (such as improvements to existing vegetation and provision of new hedgerows and trees) will be beneficial to the existing situation by the creation of improved connectivity, | improved transition with their landscape setting. The cumulative visibility for the Cottam 3a and 3b Sites would not alter the overall character of the landscape and its Ancient Woodlands and Natural Designations. Moreover, these Ancient Woodlands and Natural Designations can play a positive role in reducing the overall cumulative effects across the landscape. |
| **Magnitude** | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

* Potential exists to use targeted, low-density sheep grazing in appropriate areas of wildflower meadow under paneled areas for short periods once a suitable sward has established. This may allow for diversification of grazing management. Grazing of tussock seeded areas may be appropriate to reduce the sward every three years. Careful monitoring is however required to prevent overgrazing with conservation grazing densities used.

**Landscape Receptors – Cable Route Corridor (Cottam 1 to Cottam Power Station)**

**Receptor Baseline:**
Within Cottam Power Station to Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 3a Floodplain Valleys, which is shown on **Figure 8.5 [C6.4.8.5]**. Floodplain Valleys extend into the area/areas identified for the Cable Route Corridor and 0.5km from the outer boundary. The Floodplain Valleys mainly occur to the west of a group of settlements that extend south from Gainsborough and include Lea, Knaith, Gate Burton, Marton, Brampton and Torksey.

The areas identified for the Cable Route Corridor and 0.5km Study Area from the outer boundary fall within:

- National Character Area Profile NCA 48
- Regional Landscape Character Type RLCT 3a and RLCT 4a
- Local Landscape Character Area LCA 2 and LCA 3

**Key Features:**

*Land Use:* The landscape mainly comprises open arable and pastoral farmland, with some areas of cereal and vegetable cropping to the north of the settlement of Cottam and west of the River Trent. Land to the south of the settlement of Marton between the A156 and the River Trent is extensively in arable use as larger field systems, then with smaller fields of pasture to each side of the river corridor towards the west. Land use to the west and northwest of the Cottam Power Station is also predominantly large-scale arable with smaller fields of pasture to the south of Torksey Ferry Road. Land use between Marton and Stow is also predominantly arable with the exception of fields around Stow Park at Till Bridge Lane, which are smaller scale pasture.

*Topography and Watercourses:* The landscape is characterised by a low-lying terrain, centered on the powerful presence of the River Trent and its floodplain. The River Till is also a key watercourse where its middle reaches drain the land between Sturton by Stow in the north and Saxilby in the south. This section of the river is embanked as the water level is higher than that of the surrounding land. The landform at this location rises to approximately 15m AOD around the settlement of Sturton by Stow where it then falls towards the east and the River Till. To the west, the landform continues at around 10m AOD with levels rising to a high point of 16m AOD to the southwest of Brampton Grange with similar high points at Bunker's Hill Warren, then falling to around 5m AOD at the River Trent. Landform to the west of the River Trent falls to approximately 3m AOD around Horse Pasture Lane where Seymour Drain passes north to south (just to the north of Cottam Power Station). To the west of Cottam Power Station there are no major watercourses and landform is around 5 to 10m AOD.

*Communications and Infrastructure:* This is broadly defined by the A1133 (Newark Road), the A156 and the A1500 (Stow Park Road then Till Bridge Lane). The A1500 takes a formal straight alignment, whereas the A156 and A1133 take a meandering course serving the settlements of Knaith, Gate Burton, Marton, and Brampton. The local road network serves a number of farmsteads and smaller settlements and takes a sparse, irregular pattern to the east of the River Trent. In contrast, to the west of the Trent, the local road network forms a 'grid' pattern with a greater concentration of local roads. The mainline railway (Lincoln to Gainsborough) also passes across the landscape (north to south) with some areas in cutting, that helps lose its presence in the landscape.

*Settlements, Industry, Commerce and Leisure:* This is mostly defined by the large settlement of Gainsborough, with smaller settlements that typically villages of medieval origin. To the east, the A15 (Ermine Street) follows a straight alignment and is defined by a string of compact settlements. To the west, the coal fired power stations exert their visual influence over a wide area, particularly the plumes that rise from them and the pylons and power lines that are linked to them. There are no small villages between Marton and Brampton to the east of the Trent and settlement to the west of the Trent includes that larger settlement of South Leverton, Treswell, Rampton and Cottam. The transport network receptors are also covered in more detail under **Appendix 8.3.4** of the assessment.

*Public Rights of Way (PRoW) and Access*: The PRoW and Access receptors are covered in more detail under **Appendix 8.3.5** of the assessment.

*Nationally and Locally Designated Landscapes*: The Laughton Wood AGLV only just falls within the Study Area just to the north of Marton, where its southern tip is bordered by the mainline railway and Willingham Road. This AGLV is centered on the flat, open landscape that is dominated by large areas of woodland sandwiched between the settlements of East ferry, Laughton and Scotter. The area is dominated by the large conifer planation of Laughton Forest. The River Trent and its associated washlands forms part of the visual boundary to the west. The landscape is very flat except for the shallow ridge running north south form Hardwick Hill. There are wide panoramic views across this landscape and a strong perception of big skies except where the blocks of conifers give a strong sense of enclosure and closes down some views. There are also pockets of birch-fringed heathland within the margins of the plantations, including the nature reserve of Scotton.

*Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens:* This includes listed buildings at Stow comprising the Grade I listed Church of St Mary (List Entry: 1146624) with other Grade II listed buildings including the Threshing Barn at Church End Farm. With Marton, this includes the Grade I listed Church of St. Margaret of Antioch (List Entry: 1359484) and other Grade II listed buildings such as the Ingleby Arms Public House. At Cottam, this includes the Grade II listed Church of Holy Trinity (List Entry: 1212380).

*Ancient Woodlands and Natural Designations:* This includes the Local Wildlife Site (LWS) to the west of the River Trent in the loop of the river at Torksey.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change, the Floodplain Valleys aims to protect the open and unsettled character of the landscape from inappropriate development and that tree planting around settlement fringes can help with integration and help contribute to the overall perception of a well treed landscape. The changes from flood risk and engineered solutions are also changing the landscape, but there is potential for landscape restoration projects to assist with mitigation of this change. The potential for river landscape to change is also a key consideration, but there is potential to introduce positive landscape interventions such as biodiversity and nature conservation initiatives.<br><br>**Overall,** the susceptibility of the Floodplain Valleys is conditioned by several key forces for change that have the potential to shape the future of the landscape. These include the impact of settlement on the edges of the river floodplain, the interventions associated with flood risk, the shifting of river channels, sand and gravel extraction and power and energy infrastructure. There are however also significant benefits to be gained from a range of landscape and biodiversity interventions such as restoration projects.<br><br>The aim of the Floodplain Valleys should be to plant small-scale woodlands and linear riverine belts of planting or associated with lakes and pools within the pastoral floodplain with larger scale farm woods with more open agricultural landscapes. Limited native tree planting may also be appropriate.<br><br>The visual intrusion from sand and gravel extraction is also a 2 recognized feature of the landscape, but in producing restoration plans there is an opportunity to maximize biodiversity benefits. The impact on long distance views from surrounding towns and villages is also a key consideration. | *Scenic:* The attractiveness of the landscape is typified by the minor road network to the west of the River Trent, which follows a 'grid'.<br><br>*Cultural:* This is shaped by the historic evidence of the Roman period, with the network of long, straight roads that pass north south, with east west roads that take a more meandering alignment.<br><br>*Natural:* The wet and often peaty low-lying areas are key in supporting some habitats and types of woodland.<br><br>*Recreation and Enjoyment:* The tranquil experiential qualities are strong in many places along the banks of the River Trent. A sense of history is also experienced through the medieval settlement pattern that remain broadly intact and are a focus for recreation and enjoyment.<br><br>*Local Distinctiveness and Sense of Place:* The line of settlements, aligned approximately north to south along the road network (that closely follow the River Trent) retain much of their historic character and a distinctive 'sense of place' to the landscape.<br><br>*Health and Wellbeing:* Rural tranquility remains a strong feature over the area, however significant development pressures exist from the major roads that traverse this landscape. This area however is generally traversed by a smaller more informal historic road network that passes east to west connecting the Trent to the Roman routes on the ridge line.<br><br>*Important Spatial Function:* Areas of pasture and grassland habitats add to the spatial function of the area where they are present particularly due to the change of intimacy within the landscape.<br><br>**Overall,** the value of the Detailed Landscape Receptors for the Cable Route Corridor (Cottam 1 Site/Sites to Cottam Power Station) are shaped by the relative attractiveness of the landscape to the west of the River Trent where the road network follows a 'grid' pattern to reflect the prevailing field and drainage pattern. There are tranquil areas along the banks of the River Trent, but there are also pressures on the character of the landscape from the major road networks that run north south and closely follow the River Trent. | *Character:* There would generally be described as unique where vast stretches of floodplain retain an intact and traditional character.<br><br>*Quality:* Areas have a positive landscape character with elements that would have a medium tolerance to change such as the unsettled character of the landscape that is competing with the impact of settlement o the edges of the floodplain.<br><br>*Value:* The floodplain landscape provides facilities that are well-used and valued by local communities and visitors including for informal recreation and nature, notably for overwintering birds.<br><br>*Capacity:* The remote areas have some vulnerability to unsympathetic development, but most landscape features are commonplace that could be readily replicated. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (0.5km Study Area) | Medium (0.5km Study Area) | **Medium** | |
| Medium (Cable Route Corridor) | Medium to Low (Cable Route Corridor) | **Medium to Low** | |

| Landscape Receptors – Cable Route Corridor (Cottam 1 to Cottam Power Station) | | | | |
|---|---|---|---|---|
| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | For the above visual receptors there would be an appreciation of the digging and the presence of small-scale machinery for example along the length of the Cable Route Corridor as it is installed. However, this would not be above that typically associated with utility installation of this nature and would be limited to a short-term duration. During this time the installation would appear as a minor curiosity alongside an existing busy highway route.<br><br>There is a need for HDD construction techniques at a number of locations across the Cable Route Corridor, however, this will depend on the results of the ground investigations and the final detailed design. At certain crossing locations such as railways; and watercourses such as the Rivers Trent and Till, HDD will be required. This is addressed in the Crossing Schedule **[EN010133/APP/C7.17]**. The installation of the Cable Route Corridor is not expected to result in any tree or hedgerow loss at these crossing points.<br><br>In relation to the Cable Route Corridor crossing the Trent, this is a necessary part of the scheme. The cable will be directionally drilled under the river and so no permanent above ground structures are proposed. During the construction period there are likely to be temporary construction compounds then these will be removed.<br><br>In terms of existing Dredging Tips, these are associated with the continued navigation of the River Trent and the stretch of river identified for the Cable Route Corridor will not yield any likely significant effects on these dredging tips.<br><br>In relation to noise from directional drilling, the noise concerned with work to install the cable crossing beneath the River Trent is addressed in the Noise Chapter **[EN010133/APP/C6.15]**.<br><br>In terms of the navigational amenity for river users, any construction impacts will not be evident due to the large separation distance.<br><br>In relation to construction activities, a full barrier / Heras fencing and signage will be installed around each designated work area. Each work area will then be excavated to expose all utilities present and to co-ordinate and prepare the area for installation of the proposed ducts / pipes. Some locations may require shuttering along the trench. There are no likely significant effects, since the works would be temporary and activities will be planned and co-ordinated before works commence in each work area. Any lighting required for safety purposes would be directed to avoid light spill into surrounding areas. Welfare facilities will be provided at each designated work area including canteen, toilets and a drying room. The exact location of the ducts / pipes and working areas would be confined to designated locations to ensure operations are controlled are precisely associated with each working area.<br><br>The extent of the designated work area is dependent on the voltage of the cables where the number of circuits will affect the width of cable trenches required. The range of typical cable trench widths relating to the 132kV and 400kV cables is 0.6 to 1.1 metres. However, the width and spacing of the cable trenches may differ depending on environmental constraints, engineering requirements or if crossing third party apparatus (e.g., railway lines). In addition to the trenches, land will be required in the corridor for access and soil and cable 'lay down'. Construction compounds along this route will also be required. Any existing overhead power lines will be retained, and no new overhead lines will be required. | Following installation of the ducts / pipes each designated work area will be backfilled and the ground re-instated to match the existing conditions. | Following installation of the ducts / pipes each designated work area will be backfilled and the ground re-instated to match the existing conditions. | Following backfilling and ground reinstatement, the ducts / pipes at each location would remain in situ and not be removed. Following installation, the land is returned to its original use and this would remain through the decommissioning stage. |
| **5km Study Area:** | | | | |
| **Magnitude** | Low | Very Low | Very Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Neutral & Long Term | Neutral & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** |

| **Landscape Receptors – Cable Route Corridor (Cottam 1 Site/Sites to Cottam Power Station)** |
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| The visual effects for the Cable Route Corridor (Cottam 1 Site/Sites to Cottam Power Station) Receptors are set out within the Viewpoint Receptor Sheets at **Appendix 8.3.2.3 [C6.3.8.2.3.]** and **Appendix 8.3.2.4 [C6.3.8.3.2.4]** the Residential Overview Sheets at **Appendix 8.3.3.1 [C6.3.8.3.3.1]** the Transport Overview Sheets at **Appendix 8.3.4.1 [C6.3.8.3.4.1]** and the PRoW Overview Sheets at **Appendix 8.3.5.1 [C6.3.8.3.5.1]**. |

| **Landscape Receptors – Cable Route Corridor (Cottam 1 Site to Cottam Power Station)** | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination Effects of the Cable Route Corridor (Cottam 1 to Cottam Power Station) with the other Cumulative Sites and Cable Route Corridors is Negligible at the construction, operation (year 1 and year 15) and decommissioning stages with embedded and additional mitigation The low-level nature of the Scheme, together with the improvements to the wider landscape context with new hedgerows and tree planting, would give rise to additional vegetative layering of the landscape, all helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in landscape elements or features of the landscape within the Cable Route Corridor (Cottam 1 to Cottam Power Station). The landscape is shaped by the relative attractiveness of the landscape to the west of the River Trent where the road network follows a 'grid' pattern to reflect the prevailing field and drainage pattern. There are tranquil areas along the banks of the River Trent, but there are also pressures on the character of the landscape from the major road networks that run north south and closely follow the River Trent<br><br>There would be the introduction of new elements and features comprising the Cable Route Corridor extending between the Cottam Power Station to join with the Cottam 1 Site/Sites (the 'Cable Route Corridor').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.1 [C6.4.8.15.1.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the Cable Route Corridor, Cottam 2 Site, and Cottam 3a and 3b Sites and the Cable Routes would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these cumulative sites and the Cable Route Corridors.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites and Cottam 2 Site, located to the:<br>• west of Sturton by Stow, extending from West Syke Lane as far as Normanby by Stow.<br><br>The Land Use, Topography and Watercourses, Communications and Infrastructure, Settlements, Industry, Commerce and Leisure, Nationally and Locally Designated Landscapes, Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens and Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2, and Cottam 3a Sites, located to the:<br>• northeast of Sturton by Stow, extending between Tillbridge Road and Ingham Road.<br><br>The Land Use, Topography and Watercourses, Communications and Infrastructure, Settlements, Industry, Commerce and Leisure, Nationally and Locally Designated Landscapes, Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens and Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2, and Cottam 3b Sites, located to the:<br><br>• northeast of Sturton by Stow, extending between School Lane Farm and Ingham Road. | *In Summary*<br>The Cumulative Effects of the Scheme including the Cable Route Corridor with the other Cumulative Developments is Negligible with the Tillbridge Development, giving rise to no likely Significant effects at construction and year 1 of operation. The effects would be Negligible at year 15 and decommissioning stages with the embedded and additional mitigation. The low-level nature of the Scheme, together with the improvements to the wider landscape context with new hedgerows and tree planting, would give rise to additional vegetative layering of the landscape, all helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes in landscape elements or features of the landscape within the Cable Route Corridor (Cottam 1 Site/Sites to Cottam Power Station). The landscape is shaped by the relative attractiveness of the landscape to the west of the River Trent where the road network follows a 'grid' pattern to reflect the prevailing field and drainage pattern. There are tranquil areas along the banks of the River Trent, but there are also pressures on the character of the landscape from the major road networks that run north south and closely follow the River Trent<br><br>There would be the introduction of new elements and features comprising the Cable Route Corridor extending between the Cottam Power Station to join with the Cottam 1 Site/Sites (the 'Cable Route Corridor').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that within the Cable Route Corridor, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cable Route Corridor and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of the Cottam Sites, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 2 Site |

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| | The Land Use, Topography and Watercourses, Communications and Infrastructure, Settlements, Industry, Commerce and Leisure, Nationally and Locally Designated Landscapes, Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens and Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>There are local patches of intervisibility between All Sites comprising the landscape to the:<br>• east boundary of the Cottam 1 North Site/Sites, extending from Glentworth in the north as far as Ingham in the south.<br><br>The Land Use, Topography and Watercourses, Communications and Infrastructure, Settlements, Industry, Commerce and Leisure, Nationally and Locally Designated Landscapes, Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens and Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape*<br>Overall, the character of the landscape is shaped by the attractiveness of the landscape is typified by the minor road network to the west of the River Trent, which follows a 'grid. 'The tranquil experiential qualities are strong in many places along the banks of the River Trent. A sense of history is also experienced through the medieval settlement pattern that remain broadly intact and are a focus for recreation and enjoyment. The cumulative visibility for the Cable Route Corridor (Cottam 1 Site/Sites to Cottam Power Station) would not alter the overall character of the landscape. | and north of the Cottam 1 Site, where their boundaries are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the Cable Route Corridor. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) across the Sites and Study Area.<br><br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam Sites where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, and where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.<br><br>*Overall Character of the Landscape*<br>Overall, the character of the landscape is shaped by the attractiveness of the landscape is typified by the minor road network to the west of the River Trent, which follows a 'grid. 'The tranquil experiential qualities are strong in many places along the banks of the River Trent. A sense of history is also experienced through the medieval settlement pattern that remain broadly intact and are a focus for recreation and enjoyment. The cumulative visibility for the Cable Route Corridor (Cottam 1 Site/Sites to Cottam Power Station) would not alter the overall character of the landscape. |
| **Magnitude** | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1): **with only** Embedded Mitigation: Very Low<br>Operation (Year 15): Low<br>Decommissioning: Very Low | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1): **with only** Embedded Mitigation: Very Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Negligible **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Negligible **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

**Landscape Receptor – Cable Route Corridor (Cottam 1 Site to Cottam 2 Site)**

**Receptor Baseline:**

The areas identified for the Cable Route Corridor and 0.5km Study Area from the outer boundary fall within:

- National Character Area Profile NCA 48
- Regional Landscape Character Type RLCT 4a
- Local Landscape Character Area LCA 3

**Key Features:**

*Land Use*: The landscape mainly comprises gently undulating and low-lying landform where the landscape follows a north-south pattern due to the orientation of the underlying Triassic and Jurassic geology. The landscape mainly comprises open arable and pastoral farmland with good hedgerow boundaries. A collection of larger field systems are found where Kexby Road meets with Cow Lane (the junction with Glentworth Road). There are also rectangular woodland blocks at this location, that divide the arable fields, reducing their scale in the landscape. These woodland blocks are also connected by wide shelterbelts.

*Topography and Watercourses*: The landscape is associated with the distinct landform ridge and around Grayingham, Blyborough, Willhoughton, Hemswell and Harpswell, to the east of the Cable Route Corridor. Blyborough is particularly a backdrop for views across the Till Vale due to the abundance of woodland cover associated with Blyborough Hall that forms a strong feature on the ascending scarp slope. The scarp slope then supports further woodlands around Glentworth that also appear as a distinctive feature on the scarp slope and help to define landscape pattern. The River Till is also a key watercourse, and its middle reaches drain the land to the are embanked between Saxilby in the south as far as Sturton by Stow in the north, as the water level is higher than that of the surrounding land. This river system forms part of a gently undulating and low-lying landform in the main, Ditches feed into the wider drainage network of the River Till.

*Communications and Infrastructure*: This is broadly defined by a landscape that is crossed by minor roads and those that descend from the ridge-top route of the B1398 as steep lanes provide valuable views over the Till Vale. These small roads form part of a local road network running in a predominantly north south and east west direction across the landscape. The cable corridor follows a route along Gypsy Lane and Cow Lane (which run north south) then crossing several east west roads, including Common Lane at Heapham, Bratt Field Middle Road and Bratt Field Road South at Sturgate and School Lane at Springthorpe.

*Settlements, Industry, Commerce and Leisure*: This is mostly defined by the settlements of Willingham by Stow, Kexby, Upton, Sturgate and Springthorpe, where the Cable Route Corridor passes to the east of these settlements. The transport network receptors are also covered in more detail under **Appendix 8.3.4** of the assessment.

*Public Rights of Way and Access:* The PRoW and Access receptors are covered in more detail under **Appendix 8.3.5** of the assessment.

*Nationally and Locally Designated Landscapes*: The Ridge AGLV is located outside the Study Area. This AGLV is centered on the landscape associated with the distinct landform ridge and around Grayingham, Blyborough, Willhoughton, Hemswell and Harpswell, to the east of the Cable Route Corridor, which defines this low-lying landscape to the east, and this is an important landscape feature. The landscape mainly comprises open arable and pastoral farmland with good hedgerow boundaries.

*Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens*: This includes the Grade II listed Corringham Windmill (List Entry: 1359417), otherwise there are no other listed buildings within the Study Area. Glentworth and Fillingham are noted as a backdrop for views across the Till Vale due to the abundance of woodland cover associated with Fillingham Castle that forms a strong feature on the ascending scarp slope. The scarp slope then supports further woodlands around Glentworth that also appear as a distinctive feature on the scarp slope and help to define landscape pattern.

*Ancient Woodlands and Natural Designations*: There are no Ancient Woodlands, Local Nature Reserves, Local Wildlife Sites or Sites of Special Scientific Interest. The Study Area includes the Willingham to Fillingham Road Verges Local Wildlife Site (LWS). This is a 3 – 3.5m wide roadside verge where the main habitats are calcareous grassland and neutral grassland (unimproved, semi-improved). This LWS is present due to the network of quiet lanes that lead to the villages, especially where they are associated with the watercourses, otherwise the floodplain grazing marsh is the most extensive semi-natural habitat focused along the Trent. Where woodland cover is limited, these watercourses and quiet lanes provide an important substitute woodland and woodland edge habitat as well as being significant linear features in the landscape

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change, the Unwooded Vales aims to protect existing rural landscape features, in particular the restoration of hedgerows since the most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, increase in field size. The loss of pasture is particularly evident around settlements, where grazing animals and smaller field sizes contribute to the setting and structure of several villages. Many of the rural villages have not seen widespread expansion but development pressures continue with the demand for housing, commerce and industry creating visual intrusion and extending the urban fringe. For development associated with the rural villages, specific mechanisms include Village Design Statements, and tree planting around settlement fringes to help integrate new development.<br><br>**Overall,** the susceptibility of the Unwooded Vales is conditioned by managing growth, ensuring development is appropriate in terms of type, scale, and location. The flat, open landscape is also a key consideration and whilst the aim is to plan new tree planting around key settlements, woodland does not form a significant component of this landscape, and in considering its open and expansive character, extensive new woodland planting would be generally inappropriate.<br><br>The aims for the Unwooded Vales should be to plan new tree planting around key settlements and other suitable locations. Trees should be typically grouped in small plantations/copses or as individual trees within hedgerows. The creation of new hedgerows and permanent pasture along watercourses is also a priority, enhancing visibility of steams and dykes, whilst increasing the occurrence of semi- natural habitats. Although the remaining hedgerow network in generally strong, there is nevertheless evidence of decline in several areas, with gaps and few hedgerow trees.<br><br>However, there is significant benefit with appropriate tree planting that could be used in and around settlements to increase the occurrence of semi-natural habitats and maintain the perception of a 'well-treed' landscape. The relevant characteristics of the landscape therefore have a moderate ability to accommodate change without undue adverse effects. | *Scenic:* The attractiveness of the landscape is typified by the strong minor road network, which is wide and sinuous in nature and reflects the strong east to west alignment of the field patterns. North south roads also feature within this network, which allow views across the scenic landscape.<br><br>*Cultural:* This character extends to comprise the collection of medieval deserted settlements that populate the area between the higher ridge line and the Trent to the west.<br><br>*Natural:* Ancient hedgerows are still evident and sinuous belts of trees and shrubs define ancient parish boundaries. The landscape feels exposed in parts, but the combination of the bends in the local lanes and small blocks of woodlands provide a stronger sense of enclosure. The woodlands within this landscape pattern are important as natural features.<br><br>*Recreation and Enjoyment:* The local road network provides access for recreation; however, the mown grass verges detract from the natural character of the area.<br><br>*Local Distinctiveness and Sense of Place:* The presence of the east west road network creates a local distinctiveness and the right-angled bends in them offer a more natural 'sense of place'.<br><br>*Health and Wellbeing:* Rural tranquility remains a strong feature over the area, however significant development pressures exist from the major roads that traverse the landscape. This area however is generally traversed by a smaller more informal historic road network that passes east to west connecting the Trent to the Roman routes on the ridge line.<br><br>*Important Spatial Function:* There is a strong relationship between scenic quality and settlement where many villages derive their character from distinctive views, local landmarks, and features around their edges. There are also robust hedgerows with smaller fields and many trees in these locations that assist with closing down of views across the area adding to the intimacy of the landscape overall.<br><br>**Overall,** the value of the Detailed Landscape Receptors for the Cable Route Corridor (Cottam 1 Site/Sites to Cottam 2 Site) is shaped by the natural character of the local road network that offers scope to improve habitat connectivity between the Till Vale and the Trent flood plain. In terms of scenic value, the district has relatively few tourist 'attractions' and many visitors just simply enjoy the pleasant drives along across the local road network, including the views towards the historic churches, and the long views between the Till Vale and the Lincolnshire Cliff. The rectangular woodland blocks are also a key feature. | *Character:* The interruptions at bridge crossings are a significant component of the landscape that provide local points of interest, and which are locally distinctive.<br><br>*Quality:* The extensive expanses of semi-natural habitat, rivers, and streams are an important landscape feature such the River Till where the course can be observed by tracing sinuous belts of riparian habit and riverside trees, which gives the area a positive character.<br><br>*Value:* Wide panoramic views are possible from the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Capacity:* The landscape has some vulnerability to unsympathetic development, but features are generally commonplace that could be readily replaced. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |

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| Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpse of neighboring elevated lands is often sufficient to provide a sense of place and add to the recreation and enjoyment of the area. Typically, these locations occur around Thorpe le Fallows and Coates. | | | |
| Medium (0.5km Study Area) | Medium (0.5km Study Area) | **Medium** | |
| Medium (Cable Route Corridor) | Medium to Low (Cable Route Corridor) | **Medium to Low** | |

| Landscape Receptors – Cable Route Corridor (Cottam 1 Site to Cottam 2 Site) | | | | |
|---|---|---|---|---|
| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | For the above visual receptors there would be an appreciation of the digging and the presence of small-scale machinery for example along the length of the Cable Route Corridor as it is installed. However, this would not be above that typically associated with utility installation of this nature and would be limited to a short-term duration. During this time the installation would appear as a minor curiosity alongside an existing busy highway route.<br><br>There is a need for HDD construction techniques at a number of locations across the Cable Route Corridor, however, this will depend on the results of the ground investigations and the final detailed design. At certain crossing locations such as railways; and watercourses such as the Rivers Trent and Till, HDD will be required. This is addressed in the Crossing Schedule **[EN010133/APP/C7.17]**. It is not expected that the installation of the Cable Route Corridor will result in any tree or hedgerow loss at these crossing points.<br><br>In terms of existing Dredging Tips, these are associated with the continued navigation of the River Trent and the stretch of river identified for the Cable Route Corridor will not yield any likely significant effects on these dredging tips.<br><br>In relation to noise from directional drilling, the noise concerned with work to install the cable crossing beneath the River Trent is addressed in the Noise Chapter **[EN010133/APP/C6.15]**.<br><br>In terms of the navigational amenity for river users, any construction impacts will not be evident due to the large separation distance.<br><br>In relation to the Cable Route Corridor crossing the Trent, this is a necessary part of the scheme. The cable will be directionally drilled under the river and so no permanent above ground structures are proposed. During the construction period there are likely to be temporary construction compounds then these will be removed.<br><br>In terms of construction activities, a full barrier / Heras fencing and signage will be installed around each designated work area. Each work area will then be excavated to expose all utilities present and to co-ordinate and prepare the area for installation of the proposed ducts / pipes. Some locations may require shuttering along the trench. There are no likely significant effects, since the works would be temporary and activities will be planned and co-ordinated before works commence in each work area. Any lighting required for safety purposes would be directed to avoid light spill into surrounding areas. Welfare facilities will be provided at each designated work area including canteen, toilets and a drying room. The exact location of the ducts / pipes and working areas would be confined to designated locations to ensure operations are controlled are precisely associated with each working area.<br><br>The extent of the designated work area is dependent on the voltage of the cables where the number of circuits will affect the width of cable trenches required. The range of typical cable trench widths relating to the 132kV and 400kV cables is 0.6 to 1.1 metres. However, the width and spacing of the cable trenches may differ depending on environmental constraints, engineering requirements or if crossing third party apparatus (e.g., railway lines). In addition to the trenches, land will be required in the corridor for access and soil and cable 'lay down'. Construction compounds along this route will also be required. Any existing overhead power lines will be retained, and no new overhead lines will be required. | Following installation of the ducts / pipes each designated work area will be backfilled and the ground re-instated to match the existing conditions. | Following installation of the ducts / pipes each designated work area will be backfilled and the ground re-instated to match the existing conditions. | Following backfilling and ground reinstatement, the ducts / pipes at each location would remain in situ and not be removed. Following installation, the land is returned to its original use and this would remain through the decommissioning stage. |
| **5km Study Area:** | | | | |
| **Magnitude** | Low | Very Low | Very Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Neutral & Long Term | Neutral & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** |

| **Landscape Receptors – Cable Route Corridor (Cottam 1 Site/Sites to Cottam 2 Site)** |
|---|
| The visual effects for the Cable Route Corridor (Cottam 1 Site/Sites to Cottam Power Station) Receptors are set out within the Viewpoint Receptor Sheets at **Appendix 8.3.2.3 [C6.3.8.2.3.]** and **Appendix 8.3.2.4 [C6.3.8.3.2.4]** the Residential Overview Sheets at **Appendix 8.3.3.1 [C6.3.8.3.3.1]** the Transport Overview Sheets at **Appendix 8.3.4.1 [C6.3.8.3.4.1]** and the PRoW Overview Sheets at **Appendix 8.3.5.1 [C6.3.8.3.5.1]**. |

| **Landscape Receptor – Cable Route Corridor (Cottam 1 Site to Cottam 2 Site)** | | |
|---|---|---|
| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination Effects of the Cable Route Corridor (Cottam 2 to Cottam 3a and 3b) with the other Cumulative Sites and Cable Route Corridors is Negligible at the construction, operation (year 1 and year 15) and decommissioning stages with embedded and additional mitigation The low-level nature of the Scheme, together with the improvements to the wider landscape context with new hedgerows and tree planting, would give rise to additional vegetative layering of the landscape, all helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the landscape elements or features within the Cable Route Corridor (Cottam 1 Site/Sites to Cottam 2 Site). The landscape is shaped by the local road network that offers scope to improve habitat connectivity between the Till Vale and the Trent flood plain. In terms of scenic value, the district has relatively few tourist 'attractions and many visitors just simply enjoy the pleasant drives along across the local road network, including the views towards the historic churches, and the long views between the Till Vale and the Lincolnshire Cliff. The rectangular woodland blocks are also a key feature.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.2 [C6.4.8.15.1.2]** which shows that with the Cottam 2 Site, cumulative visibility with the Cottam 1 Site/Sites and Cottam 3a and 3b Sites would not be experienced across the entirety of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of intervisibility between the Cottam 2 Site and with the 3a and Cottam 3b Sites extending from the:<br>• South boundary of the Cottam 2 Site, starting at the eastern edge of Corringham and reaching as far as Yawthorpe Beck and Yawthorpe<br><br>The Land Use, Topography and Watercourses, Communications and Infrastructure, Settlements, Industry, Commerce and Leisure, Nationally and Locally Designated Landscapes, Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens and Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>There is a local patch of intervisibility between the Cottam 2 Site and with the Cottam 3b Site, comprising the:<br>• Southeast of the River Eau, extending as far as Huckerby Farm and Huckerby Bungalows.<br><br>The Land Use, Topography and Watercourses, Communications and Infrastructure, Settlements, Industry, Commerce and Leisure, Nationally and Locally Designated Landscapes, Scheduled | *In Summary*<br>The Cumulative Effects of the Scheme including the Cable Route Corridor with the other Cumulative Developments is Negligible with the Tillbridge Development, giving rise to no likely Significant effects at construction and year 1 of operation. The effects would be Negligible at year 15 and decommissioning stages with the embedded and additional mitigation. The low-level nature of the Scheme, together with the improvements to the wider landscape context with new hedgerows and tree planting, would give rise to additional vegetative layering of the landscape, all helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the landscape elements or features within the Cable Route Corridor (Cottam 1 Site/Sites to Cottam 2 Site). The landscape is shaped by the local road network that offers scope to improve habitat connectivity between the Till Vale and the Trent flood plain. In terms of scenic value, the district has relatively few tourist 'attractions and many visitors just simply enjoy the pleasant drives along across the local road network, including the views towards the historic churches, and the long views between the Till Vale and the Lincolnshire Cliff. The rectangular woodland blocks are also a key feature.<br><br>There would be the introduction of new elements and features comprising the solar panel areas, the substation area and the Cable Route Corridor extending between the Cottam 1 Site/Sites and the Cottam 2 Site and the Cottam 2 Site and Cottam 3a and 3b Sites (the 'Cable Route Corridors').<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that within the Cable Route Corridor, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cable Route Corridor and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of the Cottam Sites, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 2 Site and north of the Cottam 1 Site, where their boundaries are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the Cable Route Corridor. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) across the Sites and Study Area. |

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| | Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens and Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility<br><br>There are local patches of intervisibility between All Sites comprising the:<br>• North of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe<br><br>The Land Use, Topography and Watercourses, Communications and Infrastructure, Settlements, Industry, Commerce and Leisure, Nationally and Locally Designated Landscapes, Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens and Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape*<br>Overall, the character of the landscape is shaped by the strong minor road network, which is wide and sinuous in nature and reflects the strong east to west alignment of the field patterns. North south roads also feature within this network, which allow views across the scenic landscape. The cumulative visibility for the Cable Route Corridor(Cottam 1 Site/Sites to Cottam 2 Site) would not alter the overall character of the landscape. | **Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam Sites where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, and where their presence will impair any associated landscape context with the West Burton Site.<br><br>The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.<br><br>*Overall Character of the Landscape*<br>Overall, the character of the landscape is shaped by the strong minor road network, which is wide and sinuous in nature and reflects the strong east to west alignment of the field patterns. North south roads also feature within this network, which allow views across the scenic landscape. The cumulative visibility for the Cable Route Corridor (Cottam 1 Site/Sites to Cottam 2 Site) would not alter the overall character of the landscape. |
| **Magnitude** | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1): **with only** Embedded Mitigation: Very Low<br>Operation (Year 15): Low<br>Decommissioning: Very Low | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1): **with only** Embedded Mitigation: Very Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Negligible **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Negligible **Not Significant**<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

**Landscape Receptor – Cable Route Corridor (Cottam 2 Site to Cottam 3a and 3b Sites)**

**Receptor Baseline:**

The areas identified for the Cable Route Corridor and 0.5km Study Area from the outer boundary fall within:

- National Character Area Profiles NCA 45 and NCA 48
- Regional Landscape Character Type RLCT 4a
- Local Landscape Character Area LCA 3

**Key Features:**

Land Use: The landscape mainly comprises open agricultural land with small pockets of woodland, where the settlements and villages, such as Pilham and Aisby, break up the landscape. There are a very few large woodlands in the immediate landscape that helps to retain inspirational long views towards the south and east towards Yawthorpe and Aisby. The landscape mainly comprises larger field systems that are irregular in pattern, especially where they are dissected by the meandering alignment of the tributaries of the River Till and associated with the settlements of Pilham and Aisby. Fields are more geometric in pattern to the north of the Study Area, where they border the mainline railway.

*Topography and Watercourses:* The landscape is characterised by fields that are divided by ditches and dykes. Some of these fields remain separated by hedgerows with trees and there are more minor tributaries of the River Till that cross in a diagonal alignment, in particular between the settlements of Pilham and Aisby. The landscape is generally flat, with topography varying only very slightly in elevation, typically with levels of approximately 20m AOD similar to the outlying landscape. The alignment of roads tends to cut across the diagonal tributaries, unlike the landscape to the west where the roads follow the watercourses, for example Laughton Road, which takes a north-east route from Gainsborough, is almost true to the River Trent and passes through the settlements of Laughton and Laughton Common before reaching the A159 (Laughton Road).

*Communications and Infrastructure:* This is broadly defined by the small roads running in a predominantly east west or north south direction across the landscape and many are bordered by isolated farmsteads and residential dwellings, often with very narrow grass verges and high hedgerows that add elements of intimacy to these lanes. Aisby Beck cuts across the area to the north and then to the south of Aisby. Many of the tributaries pass through the Medieval settlements of Southorpe Village, Dunstall Village and Gilby Village.

*Settlements, Industry, Commerce and Leisure:* This is mostly defined by a wider settlement pattern that includes the Medieval villages of Southorpe, Dunstall and Gilby, but these are located outside the Study Area. The settlements of Blyton and Pilham are also strong features in the landscape where the church spires are captured in views across the area, but they are also located outside the Study Area. The transport network receptors are also covered in more detail under **Appendix 8.3.4** of the assessment.

*Public Rights of Way and Access*: The PRoW and Access receptors are covered in more detail under **Appendix 8.3.5** of the assessment.

*Nationally and Locally Designated Landscapes:* The Gainsborough AGLV2 is located outside the Study Area. This is centered on the landscape associated with the outskirts of Gainsborough to the west of the Cable Route Corridor. This is the low-lying, gently undulating terrain that rises to the north-east of Gainsborough in the vicinity of Thonock Grove and Castle Hills. This relatively elevated land extends as far south as Marton and this eastern boundary of the AGLV marks a very distinct transition between the Trent Valley area and the Till Vale where significant blocks of woodland mark the boundary.

*Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens:* The Study Area does not include any Scheduled Monuments, Listed Buildings, Conservation Areas or Registered Parks and Gardens.

*Ancient Woodlands and Natural Designations:* There are no Ancient Woodlands or Natural Designations within the Study Area, but there are small pockets of woodland mainly concentrated to the east that include geometric shaped shelterbelts and also woodland plantations consisting of predominantly native species at Yawthorpe Fox Covert and Blyborough Covert.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change, the Unwooded Vales aims to protect existing rural landscape features, in particular the restoration of hedgerows since the most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, and increase in field size. The loss of pasture is particularly evident around settlements, where grazing animals and smaller field sizes contribute to the setting and structure of several villages.<br><br>**Overall,** the susceptibility of the Unwooded Vales is conditioned by managing growth, ensuring development is appropriate in terms of type, scale, and location. The flat, open landscape is also a key consideration and whilst the aim is to plan new tree planting around key settlements, woodland does not form a significant component of this landscape.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies.<br><br>The aims for the Unwooded Vales should be to plan new tree planting around key settlements and other suitable locations. Trees should be typically grouped in small plantations/copses or as individual trees within hedgerows. The creation of new hedgerows and permanent pasture along watercourses is also a priority, enhancing visibility of steams and dykes, whilst increasing the occurrence of semi- natural habitats. Although the remaining hedgerow network in generally strong, there is nevertheless evidence of decline in several areas, with gaps and few hedgerow trees.<br><br>However, there is significant benefit with appropriate tree planting that could be used in and around settlements to increase the occurrence of semi-natural habitats and maintain the perception of a 'well-treed' landscape. The relevant characteristics of the landscape therefore have a moderate ability to accommodate change without undue adverse effects.<br><br>Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpse of neighboring elevated lands is often sufficient to | *Scenic:* The fragmented woodlands are distinctive as visual features in the landscape.<br><br>*Cultural:* Views to the villages and their churches are a feature of the area. The landscape is remote due to the poorly connected road networks. As a result, this local area is defined by compact villages and dispersed farmsteads.<br><br>*Natural:* The sense of natural enjoyment that helps promote health and wellbeing stems from the local lanes, small villages, arable fields, and the peacefulness of the landscape.<br><br>*Recreation and Enjoyment:* The area offers opportunity to create more links between settlements and the surrounding countryside since many afford wide countryside settings and there is a limited network of public rights of way.<br><br>*Local Distinctiveness and Sense of Place:* Tranquility is associated with the local lanes, and this creates a particular sense of place. The area is relatively sparsely populated with isolated residential properties and farmsteads. The settings of the rural settlements also contribute to the character of the landscape.<br><br>*Health and Wellbeing:* Roads and minor farm tracks are bordered by wide verges and hedgerows, and this contributes to their function in providing an open setting to villages and the overall contribution to health and well-being.<br><br>*Important Spatial Function:* The smaller settlements provide an important spatial function, where they mainly comprise villages, farmsteads, and isolated residential dwellings. The land drains and minor tributaries of also add a marked change in the landscape.<br><br>**Overall,** the value of the Detailed Landscape Receptors for the Cable Route Corridor (Cottam 2 Site to Cottam 3a and 3b Sites) is shaped by the river tributaries that mainly follow a sinuous alignment running in all directions. The landscape has a strong rural character and recreation is provided by the numerous local lanes since the public rights of way are scarce, some of the local lanes remain tranquil and these features contribute strongly to the 'sense of place'. As a result, the landscape is devoid of large-scale landscape features and development due to the poorly connected transport network. | *Character:* The roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossing provide local points of interest and the opportunity to capture views across the landscape.<br><br>*Quality:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Aisby, Corringham and Pilham. The landscape surrounding these settlements retain a deeply rural and tranquil character.<br><br>*Value:* Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpse of neighboring elevated landscape is often sufficient to provide a sense of place and add to the recreation and enjoyment of the area.<br><br>*Capacity:* The most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, and increase in field size, which affects the capacity of the landscape to absorb change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>Panels to be set a minimum of 3m from Site boundaries.<br><br>Site boundary fencing to be set back 5m from adjacent existing hedgerows to allow for proposed thickening and growth.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out to add further thickening and growth to the field boundaries with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance or security is required. Lighting will be PIR operated and will be calibrated to vehicle and personnel movements. All visible lighting would be 50W, installed at a maximum height of 4m with cowls fitted to prevent light spillage. Lighting required within panelled areas will be manually operated. There will be no lighting on perimeter fencing.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |

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| provide a sense of place and add to the recreation and enjoyment of the area. Typically, these locations occur around Thorpe le Fallows and Coates. | | | |
| Medium (0.5km Study Area) | Medium (0.5km Study Area) | **Medium** | |
| Medium (Cable Route Corridor) | Medium to Low (Cable Route Corridor) | **Medium to Low** | |

| **Landscape Receptors – Cable Route Corridor (Cottam 2 Site to Cottam 3a and 3b Sites)** | | | | |
|---|---|---|---|---|
| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | For the above visual receptors there would be an appreciation of the digging and the presence of small-scale machinery for example along the length of the Cable Route Corridor as it is installed. However, this would not be above that typically associated with utility installation of this nature and would be limited to a short-term duration. During this time the installation would appear as a minor curiosity alongside an existing busy highway route.<br><br>There is a need for HDD construction techniques at a number of locations across the Cable Route Corridor, however, this will depend on the results of the ground investigations and the final detailed design. At certain crossing locations such as railways; and watercourses such as the Rivers Trent and Till, HDD will be required. This is addressed in the Crossing Schedule **[EN010133/APP/C7.17]**. IT is not anticipated that the installation of the Cable Route Corridor will result in any tree or hedgerow loss at these crossing points.<br><br>In relation to the Cable Route Corridor crossing the Trent, this is a necessary part of the scheme. The cable will be directionally drilled under the river and so no permanent above ground structures are proposed. During the construction period there are likely to be temporary construction compounds then these will be removed.<br><br>In terms of existing Dredging Tips, these are associated with the continued navigation of the River Trent and the stretch of river identified for the Cable Route Corridor will not yield any likely significant effects on these dredging tips.<br><br>In relation to noise from directional drilling, the noise concerned with work to install the cable crossing beneath the River Trent is addressed in the Noise Chapter **[EN010133/APP/C6.15]**.<br><br>In terms of the navigational amenity for river users, any construction impacts will not be evident due to the large separation distance.<br><br>In terms of construction activities, a full barrier / Heras fencing and signage will be installed around each designated work area. Each work area will then be excavated to expose all utilities present and to co-ordinate and prepare the area for installation of the proposed ducts / pipes. Some locations may require shuttering along the trench. There are no likely significant effects, since the works would be temporary and activities will be planned and co-ordinated before works commence in each work area. Any lighting required for safety purposes would be directed to avoid light spill into surrounding areas. Welfare facilities will be provided at each designated work area including canteen, toilets and a drying room. The exact location of the ducts / pipes and working areas would be confined to designated locations to ensure operations are controlled are precisely associated with each working area. | Following installation of the ducts / pipes each designated work area will be backfilled and the ground re-instated to match the existing conditions. | Following installation of the ducts / pipes each designated work area will be backfilled and the ground re-instated to match the existing conditions. | Following backfilling and ground reinstatement, the ducts / pipes at each location would remain in situ and not be removed. Following installation, the land is returned to its original use and this would remain through the decommissioning stage. |

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|---|---|---|---|---|
| | The extent of the designated work area is dependent on the voltage of the cables where the number of circuits will affect the width of cable trenches required. The range of typical cable trench widths relating to the 132kV and 400kV cables is 0.6 to 1.1 metres. However, the width and spacing of the cable trenches may differ depending on environmental constraints, engineering requirements or if crossing third party apparatus (e.g., railway lines). In addition to the trenches, land will be required in the corridor for access and soil and cable 'lay down'. Construction compounds along this route will also be required. Any existing overhead power lines will be retained, and no new overhead lines will be required. | | | |
| **5km Study Area:** | | | | |
| **Magnitude** | Low | Very Low | Very Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Neutral & Long Term | Neutral & Long Term | Neutral & Short Term |
| **Significance of Effect** | Minor **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** |

| **Landscape Receptors – Cable Route Corridor (Cottam 2 Site to Cottam 3a and 3b Sites)** |
|---|
| The visual effects for the Cable Route Corridor (Cottam 1 Site/Sites to Cottam Power Station) Receptors are set out within the Viewpoint Receptor Sheets at **Appendix 8.3.2.3 [C6.3.8.2.3.]** and **Appendix 8.3.2.4 [C6.3.8.3.2.4]** the Residential Overview Sheets at **Appendix 8.3.3.1 [C6.3.8.3.3.1]** the Transport Overview Sheets at **Appendix 8.3.4.1 [C6.3.8.3.4.1]** and the PRoW Overview Sheets at **Appendix 8.3.5.1 [C6.3.8.3.5.1]**. |

| **Landscape Receptor – Cable Route Corridor (Cottam 2 Site to Cottam 3a and 3b Sites)** | | |
|---|---|---|
| | **In-combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination Effects of the Cable Route Corridor (Cottam 2 to Cottam 3a and 3b) with the other Cumulative Sites and Cable Route Corridors is Negligible at the construction, operation (year 1 and year 15) and decommissioning stages with embedded and additional mitigation The low-level nature of the Scheme, together with the improvements to the wider landscape context with new hedgerows and tree planting, would give rise to additional vegetative layering of the landscape, all helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the landscape elements or features within the Cable Route Corridor (Cottam 2 Site to Cottam 3a and 3b Sites). The landscape is shaped by Views to the villages and their churches are a feature of the area. The landscape is remote due to the poorly connected road networks. As a result, this local area is defined by compact villages and dispersed farmsteads. | *In Summary*<br>The Cumulative Effects of the Scheme including the Cable Route Corridor with the other Cumulative Developments is Negligible with the Tillbridge Development, giving rise to no likely Significant effects at year 1 of operation. The effects would be Negligible at year 15 with the embedded and additional mitigation. The low-level nature of the Scheme, together with the improvements to the wider landscape context with new hedgerows and tree planting, would give rise to the vegetative layering of the landscape, all helping reduce to reduce the cumulative effect.<br><br>*Fabric of the Landscape*<br>There would not be the removal of, or changes to the landscape elements or features within the Cable Route Corridor (Cottam 2 Site to Cottam 3a and 3b Sites). The landscape is shaped by Views to the villages and their churches are a feature of the area. The landscape is remote due to the poorly connected road networks. As a result, this local area is defined by compact villages and dispersed farmsteads.<br><br>There would be the introduction of new elements and features comprising the Cable Route Corridor connecting between the Cottam 2 Site and Cottam 3a and 3b Sites, extending across the character area in a north south direction. |

There would be the introduction of new elements and features comprising the Cable Route Corridor connecting between the Cottam 2 Site and Cottam 3a and 3b Sites, extending across the character area in a north south direction.

*Aesthetic Aspects of the Landscape*
Refer to **Figure 8.15.1.2 [C6.4.8.15.1.2]** and **Figure 8.15.1.3 [C6.4.8.15.1.3] which** shows that with the Cottam 3a Site, cumulative visibility with the Cottam 1 Site/Sites, Cottam 2 Site and Cottam 3b Site would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.

There are local patches of intervisibility between the Cottam 3a and 3b Sites, extending from the:

- North boundary of the Cottam 3b Site/Sites, extending for a short distance as far as Grange Farm and Top Farm.

The Land Use, Topography and Watercourses, Communications and Infrastructure, Settlements, Industry, Commerce and Leisure, Nationally and Locally Designated Landscapes, Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens and Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.

There are local patches of intervisibility between the Cottam 3a and 3b Sites and the Cottam 2 Site, extending from the:

- South boundary of the Cottam 3b Site, bordered by Pilham to the west and the medieval settlement of Dunstall to the east, and reaching as far as Springthorpe in the south; and
- South boundary of the Cottam 3a Site, bordered by the eastern edge of Blyton to the west, reaching Grange Farm and stopping short of the mainline railway.

The Land Use, Topography and Watercourses, Communications and Infrastructure, Settlements, Industry, Commerce and Leisure, Nationally and Locally Designated Landscapes, Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens and Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.

There is a local patch of intervisibility between All Sites, located to the:

- East of the Cottam 3b Site and north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe.

The Land Use, Topography and Watercourses, Communications and Infrastructure, Settlements, Industry, Commerce and Leisure, Nationally and Locally Designated Landscapes, Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens and Ancient Woodlands and Natural Designations would not be affected by these minor patches of intervisibility.

Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:

**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**
**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**
**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**

**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**
**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**

**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**
**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**

*Aesthetic Aspects of the Landscape*
Refer to Figure **8.15.2.2 [C6.4.8.15.2.2]** and **8.15.2.3 [C6.4.8.15.2.3]** which shows that with the Cable Route Corridor, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.

There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cable Route Corridor and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:

**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6].** This shows Gate Burton to the west of the Cottam Sites, where the intervening settlements of Kexby, Willingham by Stow and Stow lie between, where their presence will impair any associated landscape context with the Gate Burton Site.

**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8].** This shows Tillbridge to the south of the Cottam 2 Site and north of the Cottam 1 Site, where their boundaries are located directly adjacent to each other, just to the south of Kexby Road and to the west of the settlement of Fillingham. There are no intervening settlements, woodlands or major topography, such that the presence of Tillbridge Development with the Scheme would give rise to a direct and compounded relationship in terms of the landscape context of the Cable Route Corridor. The presence of the Tillbridge Development would also add to coalescence between the Cottam 1 and the Cottam 2 Sites. The primary and secondary mitigation would however ensure that all existing features would be retained leading to an improvement at the operation stage (Year 15) across the Sites and Study Area.

**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9].** This shows the West Burton Development located to the southwest of the Cottam Sites where the intervening settlements of Stow, Sturton by Stow and Bransby lie between, and where their presence will impair any associated landscape context with the West Burton Site.

The other Cumulative Developments at Bumble Bee Farm, Field Farm and High Marnham are separated from the Scheme by the intervening settlements of Gainsborough, Lea, Blyton and Willingham by Stow.

*Overall Character of the Landscape*
Overall, the character of the landscape is shaped by a strong rural character and recreation is provided by the numerous local lanes since the public rights of way are scarce. Some of the local lanes remain tranquil and these features contribute strongly to the 'sense of place'. As a result, the landscape is devoid of large-scale landscape features and development due to the poorly connected transport network. The cumulative visibility for the Cable Route Corridor (Cottam 2 Site to Cottam 3a and 3b Sites) would not alter the overall character of the landscape.

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|---|---|---|
| | **Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Character of the Landscape*<br>Overall, the character of the landscape is shaped by a strong rural character and recreation is provided by the numerous local lanes since the public rights of way are scarce. Some of the local lanes remain tranquil and these features contribute strongly to the 'sense of place'. As a result, the landscape is devoid of large-scale landscape features and development due to the poorly connected transport network. The cumulative visibility for the Cable Route Corridor (Cottam 2 Site to Cottam 3a and 3b Sites) would not alter the overall character of the landscape. | |
| **Magnitude** | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1): **with only** Embedded Mitigation<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low | Construction: Very Low<br>Operation (Year 1): Very Low<br>Operation (Year 1): **with only** Embedded Mitigation: Very Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Beneficial & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1) **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Negligible<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** | Construction: Negligible **Not Significant**<br>Operation (Year 1): Negligible **Not Significant**<br>Operation (Year 1) **with only** Embedded Mitigation: Negligible<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

**Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 1 Substation Site – West A)**

**Receptor Baseline:**

Within the Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends across the majority of the 2km and 5km Study Area apart from the eastern most edge where it shares a boundary with RLCT Profile: 6a Limestone Scarps and Dipslopes. The western extent of the 5km Study Area is also host to a small part of RLCT Profile 3a: Floodplain Valleys and RLCT Profile: 4b Wooded Vales.

The Sites within Cottam 1 can be sub-divided into two distinct land areas:

- Cottam 1 North
- Cottam 1 South

**Key Features:**

Cottam 1 North:
This refers to the area located to the north of Ingham Road and to the west of this area there are the settlements of Kexby, Willingham by Stow, Normanby by Stow and Stow, which are located to each side of the B1241 (Sturton Road and Stow Road). To the centre of this area is the small hamlet of Coates and to the east there are the settlements of Fillingham and Ingham, which are located to each side of the B1398. The area is bisected by a secondary road, known as Fillingham Lane which then runs into Willingham Road, and which links the settlements of Willingham by Stow to Fillingham. The landscape mainly comprises productive arable and pastoral farmland, but there are areas of cereal and vegetable cropping to the east of Willingham by Stow around Stone Pit Lane where hedgerow removal has created some very large fields under single crop. Most of the Unwooded Vales retain a deeply rural and tranquil character, with farms and small nucleated villages located throughout areas of productive farmland, linked by narrow winding lanes and roads. Watercourses are often bordered by a narrow alluvial floodplain that wind through the landscape along shallow valleys, appearing little more than gentle folds in the landscape. This pattern of drainage is particularly evident between the settlement of Coates and Normanby by Stow and Willingham by Stow in the west of the Cottam 1 Site/Sites. This area boasts an extensive network of field drains including tributaries of the River Till that are only discernable by tracing alder and willow trees, rusty pastures, and belts of riparian habitat across the landscape. There are localised concentrations of woodland cover between Coates and Willingham by Stow that include Normanby Gorse and New Plantation, despite the overall tendency for limited woodland cover across the area.

**Character Context:**

The Cottam 1 Site/Sites is mainly located within RLCT 4a: Unwooded Vales, where the land area is found to the north and south of Ingham Road and in the context of the settlements of Coates, Thorpe in the Fallows, Sturton by Stow, Bransby, Kexby, Willingham by Stow, Normanby by Stow and Stow. To the east of the Cottam 1 Site/Sites, the landscape character type RLCT 6a: Limestone Scarps and Dipslopes shares the outer 2km Study Area (with RLCT 4a) and then extends into the 5km Study Area. The ridgeline (to the east) then gives strong containment where the settlements of Fillingham, Ingham and Cammeringham mark the boundary with the B1398.

RLCT 4a: Unwooded Vales landscape character type is main host to the Cottam 1 Site/Sites within the 2km Study Area and the 5km Study Area.

RLCT 4a is considered to form part of the immediate landscape context for the Cottam 1 Site/Sites.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change, the Unwooded Vales aims to protect existing rural landscape features, in particular the restoration of hedgerows since the most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, increase in field size. The loss of pasture is particularly evident around settlements, where grazing animals and smaller field sizes contribute to the setting and structure of several villages. Many of the rural villages have not seen widespread expansion but development pressures continue with the demand for housing, commerce and industry creating visual intrusion and extending the urban fringe. For development associated with the rural villages, specific mechanisms include Village Design Statements, and tree planting around settlement fringes to help integrate new development into the landscape.<br><br>**Overall,** the susceptibility of the Unwooded Vales is conditioned by managing growth, ensuring development is appropriate in terms of type, scale, and location. The flat, open landscape is also a key consideration and whilst the aim is to plan new tree planting around key settlements, woodland does not form a significant component of this landscape, and in considering its open and expansive character, extensive new woodland planting would be generally inappropriate.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Unwooded Vales appeal to the visual senses where the roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossing provide local points of interest and the opportunity to capture views across the landscape to the higher landform fringing the Vales,<br><br>*Cultural:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Thorpe le Fallows and Coates. The landscape surrounding these settlements retain a deeply rural and tranquil character with farms linked by minor lanes and roads. There are Roman roads that pass across the area such as Tillbridge Lane indicating that these low-lying areas provided convenient routes through the hills and wetlands.<br><br>*Natural:* The extensive expanses of semi-natural habitat, rivers and streams are an important landscape feature such as the River Till where the course can be observed by tracing sinuous belts of riparian habit and riverside trees, particularly within the area to the south of Ingham Road. Overall, in such a managed agricultural environment, networks of hedgerows and hedgerow trees gain significance in offering a refuge for birds and insects.<br><br>*Recreation and Enjoyment:* The Unwooded Vales are valued for recreation which often focused on the locations where panoramic views are possible from elevated locations from rising land at the edges of the Vales. Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpse of neighboring elevated are often sufficient to provide a sense of place and add to the recreation and enjoyment of the area. Typically, these locations occur around Thorpe le Fallows and Coates.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' with major landform features flanking the lower lying areas creating broad scale visual containment along the ridgeline to the east at Cammeringham, Ingham and Fillingham. Wide panoramic views are also possible from the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Health and Wellbeing*: The Unwooded Vales provide a very limited network of PRoW leading to the dependence on the more direct arterial routes that run east to west across the area linked by a series of narrow straight lanes.<br><br>*Important Spatial Function:* The landscape benefits from high levels of visual containment despite the low levels of woodland cover. Instead, the local landform, hedgerows and shelter belts create visual containment and give the Vales Landscape an intimate character.<br><br>**Overall,** the value of the Unwooded Vales is shaped by the strong agricultural character, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape. In recent decades, the productivity of the land has stimulated widespread change in the rural landscape. | *Character:* Medium landscape tolerance with some scope for change to landscape character. Enhancing the visibility of streams, dykes and other watercourses in the landscape would bring forward some positive benefits.<br><br>*Quality:* The most widespread change has been in agricultural intensification, where the change from pastoral to arable cropping has resulted in loss of hedges, and consequently increase in field sizes.<br><br>*Value:* The landscape shows evidence of historic settlement with farms, nucleated villages, and small hamlets such as Thorpe le Fallows and Coates, which are features value that are not highly recognised.<br><br>*Capacity:* Features are evident, but they are locally commonplace. Some features make a minimal contribution to landscape character and scope for mitigation would therefore help to reinforce their prominence in the landscape. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>A 2m buffer around the proposed development will be provided between construction areas and boundary fencing.<br><br>A max. 2.4m high steel palisade fence will surround all substation equipment.<br><br>Additional deer fencing is to be considered outside of this boundary – to be 2.5m high.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance is required.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium (Substation Site) | Medium (Substation Site) | **Medium** | |

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 1 Substation Site – West A) | | | | |
|---|---|---|---|---|
| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | The 400kv substation (option A) is located to the northwestern extents of the Cottam 1 Site/Sites within field G1 with one battery storage area of a maximum 70,000m2 contained within this field block.<br><br>The substation will consist of electrical infrastructure such as transformers, switchgear and metering equipment required to facilitate the export of electricity from each site. The Substation will include office space and welfare facilities and may include operational monitoring and maintenance equipment. Hardstanding and parking spaces will be provided, and a maintenance access road which connects to South Lane, just south of Lowfield Farm. In total, the area covered by the substation will cover approximately 26,000m2.<br><br>The control buildings will be a painted block building with external colours and finishes to be confirmed prior to construction.<br><br>The substation will comprise an area of 249m x 86.3m to include a 4m wide access road off South Lane to the east, buffers around the developed area and 2.4m high steel palisade fencing. Deer fencing is to be considered beyond these limits to a height of 2.5m.<br><br>The height of the substation equipment will vary, with low level busbars at 7m high-, and high-level busbars reaching a maximum height of 13m.<br><br>Lighting will be in the form of downlighting to be used for maintenance and security purposes.<br><br>Cottam 1 West A site is set to have a Battery Energy Storage System (BESS) to one section to the north of the proposed substation and within field G1. Impermeable surfacing around the BESS with drainage to a bunded lagoon of approximately 410m3 will store water required in the event of a fire.<br><br>Batteries will be housed within containers. The maximum dimensions of individual modular battery storage container and interconnector within a BESS compound is 2m by 3m footprint and up to 3.5m in height. The maximum | The Site lies within the Unwooded Vales LCA 4a. The substation will be relatively prominent in some views across the landscape which is relatively intact in this area. There are however some detracting views across the wider landscape including the Cottam Power Station, which is a major, but distant feature to several views. The substation will not therefore adversely affect the overall integrity of the Character Area in terms of its height but there will be an adverse impact over the close to mid-range views and to the Character Area in terms of loss of almost 10ha of land which is to be replaced with hardstanding and impermeable surfacing.<br><br>Designations lie predominantly to the west/southwest of both the Cottam 1 North and South Sites with Ancient Woodland, Local Nature Reserves and Local Wildlife Sites within the study area but having no physical or visual impact/influence on the Site(s) other than distant views where these may exist. Opportunities for reinforcement of the character area within the Cottam 1 Site/Sites are available.<br><br>The Site at Cottam 1 West lies outside the outer limits of any of the SSSI's impact risk zones locally.<br><br>In terms of mitigation for the two AGLV's associated with this Site, due to their distance and varied relationship with the Site, it is the overall scheme of mitigation that will reinforce the landscape character where this has been lost or eroded in the last century to intensive arable farming.<br><br>There will be a much greater level of tree cover over the Site(s) although this will be immature at this point.<br><br>Local PRoW are not unduly affected by the development although some minor roads used for recreational purposes will be impacted by the increase in traffic levels, noise and disruption. Several short PRoW routes exist to the west of Willingham by Stow but views from these routes are predominantly obscured by the built form and existing vegetation.<br><br>To the north of field C26 at the south of the Cottam 1 North Site, a footpath, Stow/83/1, runs through the Site adjacent to an area proposed for bird mitigation. Views towards the substation are predominantly obscured by adjacent intervening vegetation and to a great degree by the woodland at Normanby Gorse. | Secondary mitigation such as planting, and grass seeding would be taken into account at operation stage (Year 15) to include the following changes to the landscape:<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>Following mitigation, at Year 15, The existing woodland locally will be augmented by increased vegetation cover creating both visual and ecological links across the landscape to the adjoining woodland blocks. The Cottam 1 West substation site will contain a relatively large area of hardstanding and structures, some of which are up to 13m in height.<br><br>Following mitigation, there will be beneficial effects across the Site as a whole generally in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area. The substation area however will be predominantly hard standing with limited beneficial groundcover vegetation.<br><br>By Year 15, the Site at Cottam 1 generally will present a 'well treed' landscape in line with the character area aims, the existing vegetation having been allowed to grow out and new trees, hedgerows and scrub having fully established and begun to mature. The overall scene will be relatively well vegetated, with scattered and irregularly spaced trees, following the existing lines of both historic field boundaries and the road network as well as local watercourses. The area to the west of the Cottam 1 West Site is relatively well vegetated around Willingham by Stow which will help to soften many views. More exposed areas to the west, south and north will benefit from the proposed mitigation.<br><br>The structures of the substation will be predominantly screened to a height of 5m by adjacent and intervening hedgerows with hedgerow trees having reached a height of 7.5m helping to soften views from across the wider landscape. There will however be views of the taller parts of the substation structure which reach 13m in parts. Proposed and existing trees will help to soften the views of this but will not obscure them. Targeted tree planting, aimed at mitigating the most sensitive views will have matured and achieved this goal with further softening in the longer term possible.<br><br>Following mitigation, although the Site is able accommodate this change, there will be moderate adverse effects on the land use, views from local PRoW and other minor roads used for recreation. The structures will form a relatively dominant feature within some views from local area and some wider areas having an adverse effect on the Character Area as a whole. Local AGLVs are unlikely to be adversely but views may exist from the higher land to the east. No Heritage Assets are likely to be unduly affected by the change in the view, any potential views causing less than substantial harm to their settings. Local and National designations will not be adversely affected. Communication links locally will become busier, the Fillingham Road and South Lane particularly being | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining, and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area. |

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| | dimensions of modular battery storage and interconnector containing strings within a BESS compound is 24m by 3m footprint and up to 3.5m in height. Each BESS will require heating, ventilation and air conditioning or liquid cooling system to ensure the efficiency of the batteries.<br><br>In terms of battery storage, the area covered by hardstanding totals some 700,000m$^2$ with the overall substation and battery storage area approaching 10 ha in total. This will have a Major Adverse effect on land use, landscape character and the natural assets over this area as well as communication links with large quantities of materials required for the hardstanding and impermeable surfacing.<br><br>Integrated conversion units are laid out across the Sites to include transformers, inverters and swtich gear. These are to be a maximum of 15m x 5m x 3.5m high and will therefore be seen within the context of the panelled areas.<br><br>Properties potentially affected: N: Slate House Farm, South View, Magin Moor Farm, Uphill Farm directly north but bungalow on opp side of Fillingham Lane, Carisbroke Farm2 storey), The Cottage (2 storey)<br>W: Woods Farm<br>E: Lowfields Farm, Moor Farm<br><br>Activities during site preparation / enabling works, include the importing of large quantities of hard materials, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the existing hedgerows. Part of this activity would be temporary and short term whilst the structure of the substation would remain for the duration of the development and would be long term.<br><br>Overall, the construction of the substation and battery area would amount to considerable disruption and traffic during this phase and would have Major Adverse effects on the communication links locally and the Character Area. | The proposed development will have little effect on local industry and commerce although the introduction of the solar farm will provide additional traffic to the roads and lanes locally, particularly around the substation.<br><br>The settlements locally will be protected through the proposed mitigation in and around the Site(s), with strong boundary vegetation screening views into the Site and enhancing the settlement settings where these abut the proposed development. Where views cannot be screened, these will be softened by proposed tree planting.<br><br>The development will have no adverse effects on the larger settlements within the area due to its distance from these features.<br><br>There is potential that a small number of farm buildings will be lost/reutilised due to the change in the arable production within the Site(s).<br><br>This generally flat, low-lying Site at the Cottam 1 Site is part of the shallow broad river valleys locally and would benefit from the protection of minor waterways associated with the Trent and Till rivers as well as the man-made diches and dykes. Topography, soils and drainage will be affected by the high level of impermeable hardstanding around the substation and battery storage site although this will be mitigated by the proposed water storage lagoon.<br><br>Within the Cottam 1 Site, the following secondary mitigation will be implemented at the operation stage (Year 1) to enhance the regional landscape character:<br><br>The existing hedgerow to the north of the Site will help to mitigate views from properties and users of Willingham Lane. A new hedgerow is proposed to the northeastern boundary of fields G2 and G3 with development offset 100m from this lane and the adjacent properties of Lowfields Farm and Moor Farm.<br><br>A shelterbelt is proposed to the south of field G3 running east west between fields G3 and G4 to the south and along the existing watercourse. A 15m grassland buffer sets this shelterbelt away from the watercourse. A further shelterbelt is proposed to the south of field G1 directly adjacent to the substation and battery storage areas.<br><br>Existing vegetation to the north, northeast and east of field G4 will be enhanced and allowed to grow out, with new hedgerow trees added to further soften views. | affected as well as routes out from these roads to the east and west. The settlement of Willingham by Stow will be adversely affected by the views out towards the substation with some properties and routes having glimpsed views across the landscape. The relatively well vegetated road network in this area will however help to soften and reduce any views.<br><br>In terms of battery storage, the area covered by hardstanding totals some 700,000m$^2$ with the overall substation and battery storage area approaching 10 ha in total. This will have a Major Adverse effect on land use, landscape character and the natural assets over this area.<br><br>There will be beneficial effects in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area of the 4a Unwooded Vales. Overall, at Year 15, the effect of the development of the substation will be reduced to Moderate Adverse through the proposed targeted mitigation. | |

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| | | An enhanced hedgerow to the western boundary of the Site along Stonepit Lane (a dead-end lane) will augment the existing vegetation and small field pattern boundary planting which exists to the west of this lane.<br><br>A new hedgerow west of field G4 is proposed, adjacent to exiting vegetation and a new hedgerow to the south is proposed where none currently exists towards the eastern section of this boundary.<br><br>Small field patterns along Fillingham Lane to the north help to mitigate views from this road.<br><br>Overall, this increases in the vegetative cover locally with shelterbelts, new and enhanced hedgerows with hedgerow trees will help to mitigate views into the Site.<br><br>Overall, new and enhanced planting will help to link habitats and strengthen the overall character locally. Important opportunities to bolster the local vegetation cover, buffering and connecting existing fragmented vegetation, aims to create a more resilient and biodiverse landscape for the longer term.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1.<br><br>Overall, at Year 1, the effects of the proposed mitigation will not be felt due to the scale and density of the hard standing areas and the built form which will dominate the local area. The effects overall will be Major Adverse. | | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |
| **Substation Site Cottam 3a: Land Use** | | | | |
| **Magnitude** | High | High | Medium | Low |

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| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Moderate-Major **Significant** | Moderate-Major **Significant** | Moderate **Significant** | Minor **Not Significant** |
| **Substation Site Cottom 3a: Topography and Watercourses** | | | | |
| **Magnitude** | High | High | Medium | Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Moderate-Major **Significant** | Moderate-Major **Significant** | Moderate **Significant** | Minor **Not Significant** |

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 1 Substation Site – West A) | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects upon LCA – 4a of the Cottam 1 Substation-West A and Cumulative Sites is Moderate at year 1 of operation and Minor at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, the segregated nature of the Sites; together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced in combination with the Substation.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area within the character area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.1.1 [C6.4.8.15.1.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the Cottam 2 Site and Cottam 3a and 3b Sites would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are very minor patches of cumulative intervisibility which may be a focus of likely significant effects, between the Cottam 1 Site/Sites and Cottam 2 Site, located to the:<br>• east of Upton and to the south of Sturgate Airfield<br>• south of Kexby in the locality of Valley Farm<br>• east of Willingham by Stow in the locality of the residential property known as Carisbrooke<br>• east of Stow, just to the east of the property known as Tam Howes; and<br>• west of Sturton by Stow, extending from West Syke Lane as far as Normanby by Stow.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2 Site, and Cottam 3a Site, located to the:<br>• northeast of Sturton by Stow, extending between Tillbridge Road and Ingham Road.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2 Site, and Cottam 3b Site, located to the:<br>• northeast of Sturton by Stow, extending between School Lane Farm and Ingham Road.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]** | *In Summary*<br>The Cumulative Effects upon LCA – 4a of the Scheme (**including** Substations) and Cumulative Developments is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced in combination with the Substation.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area within the character area<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be the focus of likely significant effects, between the Cotton 1 Site/Sites and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6]**<br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8]**<br>**Figure 8.15.2.9** Cottam 1, 2, 3a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The minor patches of cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape within the Unwooded Vales Character Area. |

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| | **Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The minor patches of cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape within the Unwooded Vales Character Area.<br><br>Add justification text | |
| **Magnitude** | Construction: Medium<br>Operation (Year 1): Medium<br>Operation (Year 1): **with only** Embedded Mitigation: Medium<br>Operation (Year 15): Low<br>Decommissioning: Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Moderate **Significant**<br>Operation (Year 1): Moderate **Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Moderate **Significant**<br>Operation (Year 15): Minor **Not Significant**<br>Decommissioning: Minor **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

**Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 1 Substation Site – West B)**

**Receptor Baseline:**

Within the Cottam 1 Site/Sites, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends across the majority of the 2km and 5km Study Area apart from the eastern most edge where it shares a boundary with RLCT Profile: 6a Limestone Scarps and Dipslopes. The western extent of the 5km Study Area is also host to a small part of RLCT Profile 3a: Floodplain Valleys and RLCT Profile: 4b Wooded Vales.

The sites within Cottam 1 can be sub-divided into two distinct land areas:

- Cottam 1 North
- Cottam 1 South

**Key Features:**

Cottam 1 North:
This refers to the area located to the north of Ingham Road and to the west of this area there are the settlements of Kexby, Willingham by Stow, Normanby by Stow and Stow, which are located to each side of the B1241 (Sturton Road and Stow Road). To the centre of this area is the small hamlet of Coates and to the east there are the settlements of Fillingham and Ingham, which are located to each side of the B1398. The area is bisected by a secondary road, known as Fillingham Lane which then runs into Willingham Road, and which links the settlements of Willingham by Stow to Fillingham. The landscape mainly comprises productive arable and pastoral farmland, but there are areas of cereal and vegetable cropping to the east of Willingham by Stow around Stone Pit Lane where hedgerow removal has created some very large fields under single crop. Most of the Unwooded Vales retain a deeply rural and tranquil character, with farms and small nucleated villages located throughout areas of productive farmland, linked by narrow winding lanes and roads. Watercourses are often bordered by a narrow alluvial floodplain that wind through the landscape along shallow valleys, appearing little more than gentle folds in the landscape. This pattern of drainage is particularly evident between the settlement of Coates and Normanby by Stow and Willingham by Stow in the west of the Cottam 1 Site/Sites. This area boasts an extensive network of field drains including tributaries of the River Till that are only discernable by tracing alder and willow trees, rusty pastures, and belts of riparian habitat across the landscape. There are localised concentrations of woodland cover between Coates and Willingham by Stow that include Normanby Gorse and New Plantation, despite the overall tendency for limited woodland cover across the area.

**Character Context:**

The Cottam 1 Site/Sites is mainly located within RLCT 4a: Unwooded Vales, where the land area is found to the north and south of Ingham Road and in the context of the settlements of Coates, Thorpe in the Fallows, Sturton by Stow, Bransby, Kexby, Willingham by Stow, Normanby by Stow and Stow. To the east of the Cottam 1 Site/Sites, the landscape character type RLCT 6a: Limestone Scarps and Dipslopes shares the outer 2km Study Area (with RLCT 4a) and then extends into the 5km Study Area. The ridgeline (to the east) then gives strong containment where the settlements of Fillingham, Ingham and Cammeringham mark the boundary with the B1398.

RLCT 4a: Unwooded Vales landscape character type is main host to the Cottam 1 Site/Sites within the 2km Study Area and the 5km Study Area.

RLCT 4a is considered to form part of the immediate landscape context for the Cottam 1 Site/Sites.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
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| In terms of forces for change, the Unwooded Vales aims to protect existing rural landscape features, in particular the restoration of hedgerows since the most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, increase in field size. The loss of pasture is particularly evident around settlements, where grazing animals and smaller field sizes contribute to the setting and structure of several villages. Many of the rural villages have not seen widespread expansion but development pressures continue with the demand for housing, commerce and industry creating visual intrusion and extending the urban fringe. For development associated with the rural villages, specific mechanisms include Village Design Statements, and tree planting around settlement fringes to help integrate new development into the landscape.<br><br>**Overall,** the susceptibility of the Unwooded Vales is conditioned by managing growth, ensuring development is appropriate in terms of type, scale, and location. The flat, open landscape is also a key consideration and whilst the aim is to plan new tree planting around key settlements, woodland does not form a significant component of this landscape, and in considering its open and expansive character, extensive new woodland planting would be generally inappropriate.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Unwooded Vales appeal to the visual senses where the roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossing provide local points of interest and the opportunity to capture views across the landscape to the higher landform fringing the Vales,<br><br>*Cultural:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Thorpe le Fallows and Coates. The landscape surrounding these settlements retain a deeply rural and tranquil character with farms linked by minor lanes and roads. There are Roman roads that pass across the area such as Tillbridge Lane indicating that these low-lying areas provided convenient routes through the hills and wetlands.<br><br>*Natural:* The extensive expanses of semi-natural habitat, rivers and streams are an important landscape feature such as the River Till where the course can be observed by tracing sinuous belts of riparian habit and riverside trees, particularly within the area to the south of Ingham Road. Overall, in such a managed agricultural environment, networks of hedgerows and hedgerow trees gain significance in offering a refuge for birds and insects.<br><br>*Recreation and Enjoyment:* The Unwooded Vales are valued for recreation which often focused on the locations where panoramic views are possible from elevated locations from rising land at the edges of the Vales. Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpse of neighboring elevated are often sufficient to provide a sense of place and add to the recreation and enjoyment of the area. Typically, these locations occur around Thorpe le Fallows and Coates.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' with major landform features flanking the lower lying areas creating broad scale visual containment along the ridgeline to the east at Cammeringham, Ingham and Fillingham. Wide panoramic views are also possible from the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Health and Wellbeing*: The Unwooded Vales provide a very limited network of PRoW leading to the dependence on the more direct arterial routes that run east to west across the area linked by a series of narrow straight lanes.<br><br>*Important Spatial Function:* The landscape benefits from high levels of visual containment despite the low levels of woodland cover. Instead, the local landform, hedgerows and shelter belts create visual containment and give the Vales Landscape an intimate character.<br><br>**Overall,** the value of the Unwooded Vales is shaped by the strong agricultural character, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape. In recent decades, the productivity of the land has stimulated widespread change in the rural landscape. | *Character:* Medium landscape tolerance with some scope for change to landscape character. Enhancing the visibility of streams, dykes and other watercourses in the landscape would bring forward some positive benefits.<br><br>*Quality:* The most widespread change has been in agricultural intensification, where the change from pastoral to arable cropping has resulted in loss of hedges, and consequently increase in field sizes.<br><br>*Value:* The landscape shows evidence of historic settlement with farms, nucleated villages, and small hamlets such as Thorpe le Fallows and Coates, which are features value that are not highly recognised.<br><br>*Capacity:* Features are evident, but they are locally commonplace. Some features make a minimal contribution to landscape character and scope for mitigation would therefore help to reinforce their prominence in the landscape. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>A 2m buffer around the proposed development will be provided between construction areas and boundary fencing.<br><br>A max. 2.4m high steel palisade fence will surround all substation equipment.<br><br>Additional deer fencing is to be considered outside of this boundary – to be 2.5m high.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance is required.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium (Substation Site) | Medium (Substation Site) | **Medium** | |

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 1 Substation Site – West B) | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | The 400kv substation (option B with additional battery storage areas - BESS) is located to the north western extents of the Cottam 1 Site/Sites within fields G1, G2 and G3 with four areas of battery storage area totalling 152,000m$^2$ contained within these field blocks.<br><br>The substation will consist of electrical infrastructure such as transformers, switchgear and metering equipment required to facilitate the export of electricity from each site. The Substation will include office space and welfare facilities and may include operational monitoring and maintenance equipment. Hardstanding and parking spaces will be provided and a maintenance access road which connects to South Lane, just south of Lowfield Farm. In total, the area covered by the substation will cover approximately 26,000m$^2$.<br><br>The control buildings will be a painted block building with external colours and finishes to be confirmed prior to construction.<br><br>The substation will comprise an area of 249m x 86.3m to include a 4m wide access road off South Lane to the east, buffers around the developed area and 2.4m high steel palisade fencing. Deer fencing is to be considered beyond these limits to a height of 2.5m.<br><br>The height of the substation equipment will vary, with low level busbars at 7m high, and high level busbars reaching a maximum height of 13m.<br><br>Lighting will be in the form of downlighting to be used for maintenance and security purposes.<br><br>Cottam 1 West B site is set to have two Battery Energy Storage System (BESS) within fields G1 with two further storage areas either side of the access road in fields G2 and G3. Impermeable surfacing around the BESS with drainage to a bunded lagoon of approximately 410m3 will store water required in the event of a fire.<br><br>Batteries will be housed within containers. The maximum dimensions of individual modular battery storage container and interconnector within a BESS compound is 2m by 3m footprint | The Site lies within the Unwooded Vales LCA 4a. The substation will be relatively prominent in some views across the landscape which is relatively intact in this area. There are however some detracting views across the wider landscape including the Cottam Power Station, which is a major, but distant feature to a number of views. The substation will not therefore adversely affect the overall integrity of the Character Area in terms of its height but there will be an adverse impact over the close to mid-range views and to the Character Area in terms of loss of almost 10ha of land which is to be replaced with hardstanding and impermeable surfacing.<br><br>Designations lie predominantly to the west/southwest of both Cottam 1 North and South Sites with Ancient Woodland, Local Nature Reserves and Local Wildlife Sites within the study area but having no physical or visual impact/influence on the Site(s) other than distant views where these may exist. Opportunities for reinforcement of the character area within the Cottam 1 Site/Sites are available.<br><br>The Site at Cottam 1 West lies outside the outer limits of any of the SSSI's impact risk zones locally.<br><br>In terms of mitigation for the two AGLV's associated with this Site, due to their distance and varied relationship with the Site, it is the overall scheme of mitigation that will reinforce the landscape character where this has been lost or eroded in the last century to intensive arable farming.<br><br>There will be a much greater level of tree cover over the Site(s) although this will be immature at this point.<br><br>Local PRoW are not unduly affected by the development although some minor roads used for recreational purposes will be impacted by the increase in traffic levels, noise and disruption. A number of short PRoW routes exist to the west of Willingham by Stow but views from these routes are predominantly obscured by the built form and existing vegetation.<br><br>To the north of field C26 at the south of the Cottam 1 North Site, a footpath, Stow/83/1, runs through the Site adjacent to an area proposed for bird mitigation. Views towards the substation are predominantly obscured by adjacent intervening vegetation and to a great degree by the woodland at Normanby Gorse.<br><br>The proposed development will have little effect on local industry and commerce although the introduction of the solar farm will provide additional traffic to the roads and lanes locally, particularly around the substation.<br><br>The settlements locally will be protected through the proposed mitigation in and around the Site(s), with strong boundary vegetation screening views into the Site and enhancing the settlement settings where these abut the proposed development. Where views cannot be screened, these will be softened by proposed tree planting. | Secondary mitigation such as planting and grass seeding would be taken into account at operation stage (Year 15) to include the following changes to the landscape:<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>Following mitigation, at Year 15, The existing woodland locally will be augmented by increased vegetation cover creating both visual and ecological links across the landscape to the adjoining woodland blocks. The Cottam 1 West substation site will contain a relatively large area of hardstanding and structures, some of which are up to 13m in height.<br><br>Following mitigation, there will be beneficial effects across the Site as a whole generally in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area. The substation area however will be predominantly hard standing with limited beneficial groundcover vegetation.<br><br>By Year 15, the Site at Cottam 1 generally will present a 'well treed' landscape in line with the character area aims, the existing vegetation having been allowed to grow out and new trees, hedgerows and scrub having fully established and begun to mature. The overall scene will be relatively well vegetated, with scattered and irregularly spaced trees, following the existing lines of both historic field boundaries and the road network as well as local watercourses. The area to the west of the Cottam 1 West Site is relatively well vegetated around Willingham by Stow which will help to soften many views. More exposed areas to the west, south and north will benefit from the proposed mitigation.<br><br>The structures of the substation will be predominantly screened to a height of 5m by adjacent and intervening hedgerows with hedgerow trees having reached a height of 7.5m helping to soften views from across the wider landscape. There will however be views of the taller parts of the substation structure which reach 13m in parts. Proposed | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area. |

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| | and up to 3.5m in height. The maximum dimensions of modular battery storage and interconnector containing strings within a BESS compound is 24m by 3m footprint and up to 3.5m in height. Each BESS will require heating, ventilation and air conditioning or liquid cooling system to ensure the efficiency of the batteries.<br><br>In terms of battery storage, the area covered by hardstanding totals some 152,000m$^2$ with the overall substation and battery storage area approaching 17.8 ha in total. This will have a Major Adverse effect on land use, landscape character and the natural assets over this area as well as communication links with large quantities of materials being imported for the hardstanding and impermeable surfacing.<br><br>Integrated conversion units are laid out across the Sites to include transformers, inverters and switch gear. These are to be a maximum of 15m x 5m x 3.5m high and will therefore be seen within the context of the panelled areas.<br><br>Properties potentially affected: N: Slate House Farm, South View, Magin Moor Farm, Uphill Farm directly north but bungalow on opp side of Fillingham Lane, Carisbroke Farm (2 storey), The Cottage (2 storey)<br>W: Woods Farm<br>E: Lowfields Farm, Moor Farm<br><br>Activities during site preparation / enabling works, include the importing of large quantities of hard materials, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the existing hedgerows. Part of this activity would be temporary and short term whilst the structure of the substation would remain for the duration of the development and would be long term.<br><br>Overall, the construction of the substation and battery area would amount to considerable disruption and traffic during this phase and would have Major Adverse effects on the communication links locally and the Character Area. | The development will have no adverse effects on the larger settlements within the area due to its distance from these features.<br><br>There is potential that a small number of farm buildings will be lost/reutilised due to the change in the arable production within the Site(s).<br><br>This generally flat, low-lying Site at Cottam 1 is part of the shallow broad river valleys locally and would benefit from the protection of minor waterways associated with the Trent and Till rivers as well as the man-made diches and dykes. Topography, soils and drainage will be affected by the high level of impermeable hardstanding around the substation and battery storage site although this will be mitigated by the proposed water storage lagoon.<br><br>Within the Cottam 1 Site/Sites, the following secondary mitigation will be implemented at the operation stage (Year 1) to enhance the regional landscape character:<br><br>The existing hedgerow to the north of the Site will help to mitigate views from properties and users of Willingham Lane. A new hedgerow is proposed to the northeastern boundary of fields G2 and G3 with development offset 100m from this lane and the adjacent properties of Lowfields Farm and Moor Farm.<br><br>A shelterbelt is proposed to the south of field G3 running east west between fields G3 and G4 to the south and along the existing watercourse. A 15m grassland buffer sets this shelterbelt away from the watercourse. A further shelterbelt is proposed to the south of field G1 directly adjacent to the substation and battery storage areas.<br><br>Existing vegetation to the north, northeast and east of field G4 will be enhanced and allowed to grow out, with new hedgerow trees added to further soften views.<br><br>An enhanced hedgerow to the western boundary of the Site along Stonepit Lane (a dead-end lane) will augment the existing vegetation and small field pattern boundary planting which exists to the west of this lane.<br><br>A new hedgerow west of field G4 is proposed, adjacent to exiting vegetation and a new hedgerow to the south is proposed where none currently exists towards the eastern section of this boundary.<br><br>Small field patterns along Fillingham Lane to the north help to mitigate views from this road.<br><br>Overall, this increases in the vegetative cover locally with shelterbelts, new and enhanced hedgerows with hedgerow trees will help to mitigate views into the Site.<br><br>Overall, new and enhanced planting will help to link habitats and strengthen the overall character locally. Important opportunities to bolster the local vegetation cover, buffering and connecting existing fragmented vegetation, aims to create a more resilient and biodiverse landscape for the longer term. | and existing trees will help to soften the views of this but will not obscure them. Targeted tree planting, aimed at mitigating the most sensitive views will have matured and achieved this goal with further softening in the longer term possible.<br><br>Following mitigation, although the Site is able accommodate this change, there will be moderate adverse effects on the land use, views from local PRoW and other minor roads used for recreation. The structures will form a relatively dominant feature within some views from local area and some wider areas having an adverse effect on the Character Area as a whole. Local AGLVs are unlikely to be adversely but views may exist from the higher land to the east. No Heritage Assets are likely to be unduly affected by the change in the view, any potential views causing less than substantial harm to their settings. Local and National designations will not be adversely affected. Communication links locally will become busier, the Fillingham Road and South Lane particularly being affected as well as routes out from these roads to the east and west. The settlement of Willingham by Stow will be adversely affected by the views out towards the substation with some properties and routes having glimpsed views across the landscape. The relatively well vegetated road network in this area will however help to soften and reduce any views.<br><br>In terms of battery storage, the area covered by hardstanding totals some 152,000 with the overall substation and battery storage area approaching 17.8 ha in total. This will have a Major Adverse effect on land use, landscape character and the natural assets over this area.<br><br>There will be beneficial effects in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area of the 4a Unwooded Vales. Overall, at Year 15, the effect of the development of the substation will be reduced to Moderate Adverse through the proposed targeted mitigation. | |

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| | | Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1.<br><br>Overall, at Year 1, the effects of the proposed mitigation will not be felt due to the scale and density of the hard standing areas and the built form which will dominate the local area. The effects overall will be Major Adverse. | | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |
| **Substation Site Option B: Land Use** | | | | |
| **Magnitude** | High | High | Medium | Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Moderate-Major **Significant** | Moderate-Major **Significant** | Moderate **Significant** | Minor **Not Significant** |
| **Substation Site Option B: Topography and Watercourses** | | | | |
| **Magnitude** | High | High | Medium | Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Moderate-Major **Significant** | Moderate-Major **Significant** | Moderate **Significant** | Minor **Not Significant** |

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 1 Substation Site– West B) | | |
|---|---|---|
| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects upon LCA – 4a of the Cottam 1 Substation West B and Cumulative Sites is Moderate at year 1 of operation and Minor at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, the segregated nature of the Sites; together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced in combination with the Substation.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area within the character area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.1.1 [C6.4.8.15.1.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the Cottam 2 Site and Cottam 3a and 3b Sites would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are very minor patches of cumulative intervisibility which may be a focus of likely significant effects, between the Cottam 1 Site/Sites and Cottam 2 Site, located to the:<br>• east of Upton and to the south of Sturgate Airfield<br>• south of Kexby in the locality of Valley Farm<br>• east of Willingham by Stow in the locality of the residential property known as Carisbrooke<br>• east of Stow, just to the east of the property known as Tam Howes; and<br>• west of Sturton by Stow, extending from West Syke Lane as far as Normanby by Stow.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2, and Cottam 3a Sites, located to the:<br>• northeast of Sturton by Stow, extending between Tillbridge Road and Ingham Road.<br><br>There are very minor patches of cumulative intervisibility between the Cottam 1 Site/Sites, Cottam 2, and Cottam 3b Sites, located to the:<br>• northeast of Sturton by Stow, extending between School Lane Farm and Ingham Road.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]** | *In Summary*<br>The Cumulative Effects upon LCA – 4a of the Scheme (**including** Substations) and Cumulative Developments is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced in combination with the Substation.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area within the character area<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.1 [C6.4.8.15.2.1]** which shows that with the Cottam 1 Site/Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cotton 1 Site/Sites and Gate Burton Energy Park, Tillbridge Solar and West Burton Solar Park. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.6** Cottam 1, 2, 3a and 3b Gate Burton Cumulative Developments Augmented ZTV **[C6.4.8.15.2.6]**<br>**Figure 8.15.2.8** Cottam 1, 2, 3 a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8]**<br>**Figure 8.15.2.9** Cottam 1, 2, 3 a and 3b West Burton Cumulative Developments Augmented ZTV **[C6.3.4.15.2.9]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The minor patches of cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape within the Unwooded Vales Character Area. |

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| | **Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The minor patches of cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape within the Unwooded Vales Character Area. | |
| **Magnitude** | Construction: Medium<br>Operation (Year 1): Medium<br>Operation (Year 1): **with only** Embedded Mitigation: Medium<br>Operation (Year 15): Low<br>Decommissioning: Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Moderate **Significant**<br>Operation (Year 1): Moderate **Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Moderate **Significant**<br>Operation (Year 15): Minor **Not Significant**<br>Decommissioning: Minor **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

**Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 2 Substation Site)**

**Receptor Baseline:**

Within the Cottam 2 Site, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends across the entirety of the 2km Study Area and then extends into the 5km Study Area where at its eastern most edge it shares a boundary with RLCT Profile: 6a Limestone Scarps and Dipslopes. The western extent of the 5km Study Area is also host to a large part of RLCT Profile: 4b Wooded Vales.

There are also areas defined as 'Built Up Area' that extend from Gainsborough towards Blyton and Corringham following the main transport routes. The settlements of Willoughton and Hemswell are located on the boundary with RLCT Profile 6a Limestone Scarps and Dipslopes.

**Key Features:**
The main settlement of Gainsborough is located just within the 5km Study Area at the eastern edge. Other settlements include Blyton, Pilham, Corringham, Blyborough, Willoughton, Hemswell, Harpswell, Springthorpe and Heapham. The main highway corridors include the A631 (Corringham Road leading to Harpswell Lane), B1398 (Middle Street) and the A159 (Thonock Road). Key characteristics of the Unwooded Vales landscape character include an extensive, low lying rural landscape underlain by Triassic and Jurassic mudstones and clays and widespread superficial deposits. There are expansive long distance and panoramic views from higher ground at the margin of the vales from the edge of settlements such as Hemswell and Willhoughton. The scarp slope that follows the edge of the vales gives a sense of visual containment. There are also low hills and ridges which gain visual prominence in an otherwise gently undulating landscape. The complex drainage patterns of watercourses flow within the shallow undulations often flanked by pasture and riparian habitats, which adds to the character of the area. There is limited woodland cover, and instead the landscape relies on shelterbelts and hedgerow trees to gain a greater visual significance. The Unwooded Vales within the East Midlands region is sparsely settled with small villages and dispersed farms, linked together by quiet rural lanes. This road pattern is a common feature within the Cottam 2 Site where the settlements of Corringham, Yawthorpe, Aisby and Pilham are linked by a series local lanes and tracks. The Unwooded Vales generally have a strong sense of place, with major landform features flanking the lower lying areas creating broad scale visual containment. Rivers and streams are also an important landscape feature, and these include Aisby Beck, Corringham Beck and Yawthorpe Beck.

**Character Context:**

The Cottam 2 Site is mainly located within RLCT 4a: Unwooded Vales, where the land area is found to the north of the A631 (Corringham Road) and in the context of the settlements of Pilham, Corringham and Springthorpe. To the east of the Cottam 2 Site, RLCT 6a: Limestone Scarps and Dipslopes shares the outer 5km Study Area. The ridgeline (to the east) then gives strong containment where the settlements of Willhoughton, Hemswell and Harpswell mark the boundary with the B1398.

RLCT 4a: Unwooded Vales landscape character type is host to the Cottam 2 Site within the 2km study area and the 5km study area.

RLCT 4a is considered to form part of the immediate landscape context for the Cottam 2 Site.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change, the Unwooded Vales aims to protect existing rural landscape features, in particular the restoration of hedgerows since the most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, an increase in field size. The loss of pasture is particularly evident around settlements, where grazing animals and smaller field sizes contribute to the setting and structure of several villages. Many of the rural villages have not seen widespread expansion but development pressures continue with the demand for housing, commerce and industry creating visual intrusion and extending the urban fringe. For development associated with the rural villages, specific mechanisms include Village Design Statements, and tree planting around settlement fringes to help integrate new development into the landscape.<br><br>**Overall,** the susceptibility of the Unwooded Vales is conditioned by managing growth, ensuring development is appropriate in terms of type, scale, and location. The flat, open landscape is also a key consideration and whilst the aim is to plan new tree planting around key settlements, woodland does not form a significant component of this landscape, and in considering its open and expansive character, extensive new woodland planting would be generally inappropriate.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Unwooded Vales appeal to the visual senses where the roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Aisby Beck, provide local points of interest and the opportunity to capture views across the landscape to the higher landform fringing the Vales.<br><br>*Cultural:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Yawthorpe. The landscape surrounding these settlements retain a deeply rural and tranquil character with farms linked by minor lanes and roads. There are Roman roads that pass across the area such as Middle Street indicating that these low-lying areas provided convenient routes through the hills and wetlands.<br><br>*Natural:* The extensive expanses of semi-natural habitat, rivers and streams are an important landscape feature such as Yawthorpe Beck and Coringham Beck. Overall, in such a managed agricultural environment, networks of hedgerows and hedgerow trees gain significance in offering a refuge for birds and insects.<br><br>*Recreation and Enjoyment:* The Unwooded Vales are valued for recreation which often focused on the locations where panoramic views are possible from elevated locations from rising land at the edges of the Vales. Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpses of neighboring elevated lands are often sufficient to provide a sense of place and add to the recreation and enjoyment of the area. Typically, these locations occur around Hemswell and Willoughton.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' with major landform features flanking the lower lying areas creating broad scale visual containment along the ridgeline to the east at Willhoughton, Hemswell Harpswell and Hemswell Cliff.<br><br>*Health and Wellbeing:* The Unwooded Vales provide a very limited network of PRoW leading to the dependence on the more direct arterial routes that run east to west across the area linked by a series of narrow straight lanes.<br><br>*Important Spatial Function:* The landscape benefits from high levels of visual containment despite the low levels of woodland cover. Instead, the local landform, hedgerows and shelter belts create visual containment and give the Vales Landscape an intimate character.<br><br>Overall, the value of the Unwooded Vales is shaped by the strong agricultural character, where in recent decades, the productivity of the land has stimulated widespread change in the rural landscape. Large areas of permanent grassland have been ploughed up and the removal of hedgerows and ditches to accommodate large scale machinery has lost many clues of former field patterns. | *Character:* Wide panoramic views also possible from the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Quality:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Yawthorpe. The landscape surrounding these settlements retain a deeply rural and tranquil character with farms linked by minor lanes and roads.<br><br>*Value:* Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpses of neighboring elevated lands are often sufficient to provide a sense of place and add to the recreation and enjoyment of the area.<br><br>*Capacity:* Features are locally commonplace and in moderate condition. Although the remaining hedgerow network is generally strong, there is nevertheless evidence of decline in several areas, with gaps and few hedgerow trees. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>A 2m buffer around the proposed development will be provided between construction areas and boundary fencing.<br><br>A max 2.4m high steel palisade fence will surround all substation equipment.<br><br>Additional deer fencing is to be considered outside of this boundary – to be 2.5m high.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance is required.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium (Substation Site) | Medium (Substation Site) | **Medium** | |

| Landscape Receptor – **Regional Scale Landscape Character – 4a: Unwooded** Vales (Cottam 2 Substation Site) | | | | |
|---|---|---|---|---|
| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | The 132kv substation is set within the centre of the Cottam 2 Site. It measures 64m x 51m maximum including buffers, access roads and boundary fencing at 2.4m high. The height of the structure sits at 6.435m at its tallest for the high-level busbars and low-level busbars sitting at 3.995m. The substation is likely to take 12 months to construct.<br><br>Integrated conversion units are laid out across the Sites to include transformers, inverters and switch gear. These are to be a maximum of 15m x 5m x 3.5m high and will therefore be seen within the context of the panelled areas.<br><br>Properties affected: Corringham Grange Farm, The Cottage, properties in Yawthorpe to a lesser degree (mitigated by scattered tree belt and enhanced hedgerow intervening).<br><br>Viewpoints potentially affected by the substation include:<br>49 SW , 50 Yawthorpe, 48 Corringham, LCC-C-P NW, 46 SW Corringham Mill, LCC-C-Q NE.<br><br>Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground and lower-level activities would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited in number of views/potential receptors and relatively short term.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down | Landscape receptors affected by development (to differing degrees) are set out below:<br><br>Designations lie predominantly to the west/southwest of both the Cottam 2 Site with Ancient Woodland, Local Nature Reserves and Local Wildlife Sites within the study area but having no physical or visual impact/influence on the Site other than distant views where these may exist. Opportunities for reinforcement of the character area are available.<br><br>The Site lies just beyond the outer limits of the SSSI's impact risk zones of all neighbouring SSSIs.<br><br>The land use will change from intensively managed arable land to an area of construction with associated hard standing, access roads and potential for some pollution to the soils locally.<br><br>The substation area will have limited adverse effects on the topography within the immediate area, the Site being relatively level. There will be some soil movement to accommodate the hard standing, access roads and structures required. The closest watercourse is the Yawthorpe Beck which runs to the northwest and eastern boundaries of the Site and is some 620m distant at its closest point.<br><br>The roads affected by the increased traffic associated with the substations are the A631 to the south of the Site accessed by East Lane heading out of Corringham. Pilham Lane to the west will link the Cottam 2 Site to the Cottam 3a and 3b Sites to the north whilst the road to the south of Aisby is likely to have a very limited level of increased traffic. There will be traffic movement between the Site/Sites at Cottam 1 and the Sites at Cottam 2 and 3a and 3b as well as to and from elsewhere. The Sites will be linked by Cable Route Corridors discussed elsewhere in this assessment.<br><br>The settlements of Corringham to the southwest, Normaby by Stow to the southwest, Aisby to the northwest and Yawthorpe to the east will be affected, to differing degrees by the erection of the substation. There are limited industrial, commercial and leisure facilities locally and these will not be unduly affected due to their distance and intervening vegetation/built form. The increased traffic is unlikely to have any adverse effect on these receptors.<br><br>From Corringham, views looking east at East Lane/Corringham Beck junction are obscured by intervening vegetation, particularly that around Corringham Grange Farm. Further north and immediately west of the Site, views are also obscured with power lines forming part of the existing view.<br><br>The substation sits directly west of Yawthorpe some 1.2km distant.<br><br>The closest PRoW (Corr/22/1) lies to the west of Corringham and views from this route are obscured by the existing built form or intervening vegetation. | Secondary mitigation such as planting, and grass seeding would be taken into account at operation stage (Year 15) to include the following changes to the landscape:<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>Following mitigation, at Year 15, The existing woodland locally will be augmented by increased vegetation cover creating both visual and ecological links across the landscape to the adjoining woodland blocks. Grassland mixes will have established and will create valuable habitats with soil structure greatly improved through cessation of arable cultivation.<br><br>Following mitigation, the Site is able accommodate change without undue adverse effects and there will be considerable beneficial effects in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area.<br><br>By Year 15, the Site at Cottam 2 will present a 'well treed' landscape in line with the character area aims, the existing vegetation having been allowed to grow out and new trees, hedgerows and scrub having fully established and begun to mature.<br><br>The overall scene will be relatively well vegetated, with scattered and irregularly spaced trees, following the existing lines of both historic field boundaries and the road network as well as local watercourses.<br><br>The structures of the substation will be predominantly screened to a height of 5m by adjacent and intervening hedgerows with hedgerow trees having reached a height of 7.5m helping to soften views from across the wider landscape.<br><br>Following mitigation, the Site is able accommodate this change without undue adverse effects on the land use, | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area. |

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| | of internal tracks. There would also be landscape and biodiversity mitigation works around the substation, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites creating a much greater level of vegetation locally, creating many associated beneficial effects.<br><br>These short-lived construction activities would not adversely affect the local woodlands, existing vegetation or designated areas. There would be a change to the arable land use with a small area of arable land being covered by the built form. The field boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new substation. There would be an increase in the level of traffic locally.<br><br>Overall, the local woodland and other vegetated cover, both within the Site and of the wider area, is able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all existing landscape features will be retained.<br><br>Overall, the main effects are those relating to an increased level of traffic and disruption locally during construction, the loss of a small area of agricultural land and potential for ground pollution which will need to be carefully managed. There will be some adverse effects on the settlements locally, in particular Corringham. Effects on other landscape receptors are considered Minor. | There are two Areas of Great Landscape Value within the study area but not in close association with this Site. In terms of mitigation for the two AGLV's associated with this Site, due to their distance and varied relationship with the Site, it is the overall scheme of mitigation that will reinforce the landscape character where this has been lost or eroded in the last century to intensive arable farming.<br><br>There are no Listed buildings within the Site of Cottam 2, but a number within the village of Corringham to the southwest/west. Although their setting is not directly affected by development, mitigation around the western boundary of the Site will help to ensure that these properties are not impacted. Corringham Windmill sits to the south of the Site which forms its backdrop from views from the south on the A631. The substation will be somewhat screened by the existing vegetation around the pond on Site and planting of shrub in this area will reinforce this visual buffer.<br><br>There are no Conservation Areas affected by development.<br><br>The deserted village of Dunstall to the northeast of the Site is not affected by the development and its integrity is retained, but shelterbelt planting to the eastern boundary will provide additional tree cover locally.<br><br>Gilby Medieval settlement and cultivation remains (scheduled monument) is not affected by the development and its integrity is retained.<br><br>**Mitigation**<br><br>Within the Cottam 2 Site, the following secondary mitigation will be implemented at the operation stage (Year 1) to enhance the regional landscape character:<br><br>A scattered tree belt along Yawthorpe Beck with a 15m wide grassland buffer enhances the existing sparse vegetation along this watercourse, , better defining the Beck's course across the landscape and mitigating views towards the Site, and in particular the substation from the small settlement at Yawthorpe.<br><br>A small woodland to the southeast of the Cottam 2 Site is proposed where a number of trees exist, helping to bolster the level of woodland cover locally and linking to existing landscape features through enhanced hedgerows around existing field boundaries.<br><br>Existing ponds within the Site are retained and enhanced with proposed native shrub planting creating a strong buffer to these landscape elements.<br><br>Enhanced hedgerows to the south of the Site mitigate any views across the landscape from the A631 where glimpses may exist beyond intervening vegetation. Existing and new vegetation will be managed at a height of 5m.<br><br>To the west, new hedgerows with hedgerow trees around Corringham Grange Farm will help to soften views from the west, whilst a strong shelterbelt along the western boundary of the Site will mitigate views into the Site. Further hedgerow enhancement across the Site will soften views from the north, northwest and northeast where the top of the substation may be visible above existing vegetation.<br><br>Shrub planting around existing ponds will, help to screen views of the substation from the southwest and strengthen the local Character Area. | heritage assets, local and national designations, the local PRoW network and natural resources. There will be some adverse effects in terms of the communication links locally which will become busier and limited adverse effects on the settlements locally with most views softened by proposed and existing vegetation by Year 15 to create a moderate adverse effect with regard to these receptors. A number of viewpoints will be affected and where views of the substation are available, this will have a moderately adverse effect on the receptors due to the limited height of this structure which can be mitigated to a great degree. There will be considerable beneficial effects in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area of the 4a Unwooded Vales. | |

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| | | There are limited views from the road to the north adjacent to the settlement of Aisby, where the substation will sit beyond the built form of the both the Cottage and Corringham Grange Farm buildings as well as some existing vegetation.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and the varied grassland areas will have become established,<br><br>Overall, this will help to link habitats and strengthen the overall character locally and maintain a sense of place. Important opportunities to bolster the local vegetation cover, buffering and connecting existing fragmented vegetation, aims to create a more resilient and biodiverse landscape.<br><br>Overall, at Year 1, the limited road and PRoW network around the substation, together with some strong existing vegetation will limit views to the substation from many areas. There are limited Landscape effects providing an overall Moderate Adverse Effect at Year 1. | | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** | Negligible **Not Significant** |
| **Substation Site Cottam 2: Land Use** | | | | |
| **Magnitude** | High | High | Medium | Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Moderate-Major **Significant** | Moderate-Major **Significant** | Moderate **Significant** | Minor **Not Significant** |
| **Substation Site Cottam 2: Topography and Watercourses** | | | | |
| **Magnitude** | High | High | Medium | Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Moderate-Major **Significant** | Moderate-Major **Significant** | Moderate **Significant** | Minor **Not Significant** |

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 2 Substation Site) | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects upon LCA – 4a of the Cottam 2 Substation and Cumulative Sites is Moderate at year 1 of operation and Minor at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, the segregated nature of the Sites; together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced in combination with the Substation.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area within the character area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.2 [C6.4.8.15.1.2]** which shows that with the Cottam 2 Site, cumulative visibility with the Cottam 1 Site/Sites and the Cottam 3a and 3b Sites would not be experienced across the entirety of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of intervisibility between the Cottam 2 Site and with the 3a and Cottam 3b Sites extending from the:<br>• South boundary of the Cottam 2 Site, starting at the eastern edge of Corringham and reaching as far as Yawthorpe Beck and Yawthorpe<br>• West boundary of the Cottam 2 Site, extending as far as Pilham Lane<br>• East boundary of the Cottam 2 Site, extending as far Yawthorpe and Yawthorpe Fox Covert<br>• Northwest boundary of the Cottam 2 Site, extending as far as the Cottam 3a and 3b Sites.<br><br>Potential cumulative visibility between the Cottam 2 Site and with the Cottam 3a and Cottam 3b Sites would not be experienced however, due to the intervening settlements of Corringham, Yawthorpe, Aisby, Dunstall and Pilham. The flat landform and intervening vegetation cover would also close down any inter-visibility across the landscape between these areas.<br><br>There is a local patch of intervisibility between the Cottam 2 Site and with the Cottam 3b Site, comprising the:<br>• Northern-most tip of the Cottam 2 Site extending across the medieval village of Dunstall as far as the medieval village of Southorpe; and<br>• Southeast of the River Eau, extending as far as Huckerby Farm and Huckerby Bungalows.<br><br>Potential cumulative visibility between the Cottam 2 Site and the Cottam 3b Site would not be experienced however, due to the intervening vegetation lining Aisby Beck and Yawthorpe Beck. The flat landform and intervening vegetation cover would also close down and inter-visibility across the landscape between these Sites/Site.<br><br>There are local patches of intervisibility between All Sites comprising the:<br>• North of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe<br>• West of the settlement of Corringham, extending from Staplegate House as far Windy Ridge on Pilham Lane<br>• West of Springthorpe, extending across the landscape as far as Harpswell Low Farm; and | *In Summary*<br>The Cumulative Effects upon LCA – 4a of the Scheme (**including** Substations) and Cumulative Developments is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced in combination with the Substation.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area within the character area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure **8.15.2.2 [C6.4.8.15.2.2]** which shows that with the Cottam 2 Site, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 2 and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.8** Cottam 1, 2,3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The minor patches of cumulative visibility for the Cottam 1 Site/Sites would not alter the overall character of the landscape within the Unwooded Vales Character Area. |

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| | • East of Yawthorpe, extending as far as Hemswell.<br><br>Potential cumulative visibility between All Sites would not be experienced due to the intervening settlements of Corringham, Yawthorpe, Aisby, Dunstall and Pilham. The flat landform and intervening vegetation cover would also close down and inter-visibility across the landscape between these areas.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. These local patches of cumulative visibility for the Cottam 2 Site would not alter the overall character of the landscape within the Unwooded Vales Character Area 4a. | |
| **Magnitude** | Construction: Medium<br>Operation (Year 1): Medium<br>Operation (Year 1): **with only** Embedded Mitigation: Medium<br>Operation (Year 15): Low<br>Decommissioning: Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Moderate **Significant**<br>Operation (Year 1): Moderate **Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Moderate **Significant**<br>Operation (Year 15): Minor **Not Significant**<br>Decommissioning: Minor **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

**Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 3a – Substation Site)**

**Receptor Baseline:**

Within the Cottam 3a Site, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales is located within the 2km Study Area, but only extending across its eastern most part, then sharing the western most part with RLCT Profile 4b: Wooded Vales. The landscape character type then occupies an eastern part of the 5km Study Area where it shares a boundary with Kirton in Lindsey. The western part of the 5km Study Area then comprises of a mixture of RLCT 2b: Planned and Drained Fens and Carrlands, RLCT 4a: Unwooded Vales and RLCT 4b: Wooded Vales, The Unwooded Vales is generally characterised by mixed agriculture set within an enclosed landscape of low, well-maintained hedgerows.

There are also areas defined as 'Built Up Area' that extend from Gainsborough towards Blyton following the main transport routes. The settlements of Blyton, Laughton, Scotton and Scotter are located on the boundary with RLCT Profile 4b: Wooded Vales.

**Key Features:**
This is the land area that sits to the north of Kirton Road B1205 with a disused airfield located in its central part. To the east of the 2km Study Area the settlement of Northorpe occupies an area of locally higher ground at 20m AOD. The Cottam 3a Site therefore spans two different landscape character types with the majority located within Unwooded Vales whilst the western most corner of the Site/Sites (close to Blyton) is within the 'Built Up Area' which is associated with the main highway corridor of the A159 (Laughton Road). Unwooded Vales comprises of an extensive, low lying rural landscape underlain by Triassic and Jurassic mudstones and clays and widespread superficial deposits. This landscape character type offers expansive long distance and panoramic views from higher ground at the margin of the Unwooded Vales which gives a sense of visual containment. The land within this landscape character type has complex drainage patterns of watercourses that flow within shallow undulations often flanked by pasture and riparian habitats. Limited woodland cover is a key characteristic of the Unwooded Vales, and this therefore relies on shelterbelts and hedgerow trees to gain a greater visual significance and habitat value. The landscape within this landscape character type is sparsely settled with small villages and dispersed farms linked by quiet rural lanes.

**Character Context:**

The Cottam 3a Site is mainly located within RLCT 4a: Unwooded Vales landscape character type, where the land area is found to the north of Kirton Road B1205 (and mainline railway) and to the north of the settlement of Pilham and northeast of the settlement of Blyton where it forms the boundary with the adjoining RLCT 4b: Wooded Vales. To the east of the Cottam 3a Site, the settlement of Northorpe forms part of a wider collection of other scattered farmsteads across this landscape character type. The ridgeline (further to the east) then gives strong containment where the settlements of Kirton in Lindsey, Grayingham, Blyborough and Willhoughton mark the boundary with the B1398.

RLCT 4a: Unwooded Vales landscape character type is host to the Cottam 3a Sites within the 2km study area and the 5km study area.

RLCT 4a is considered to form part of the immediate landscape context for the Cottam 3a Site.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
|---|---|---|---|
| In terms of forces for change, the Unwooded Vales aims to protect existing rural landscape features, in particular the restoration of hedgerows since the most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, an increase in field size. The loss of pasture is particularly evident around settlements, where grazing animals and smaller field sizes contribute to the setting and structure of several villages. Many of the rural villages have not seen widespread expansion but development pressures continue with the demand for housing, commerce and industry creating visual intrusion and extending the urban fringe. For development associated with the rural villages, specific mechanisms include Village Design Statements, and tree planting around settlement fringes to help integrate new development into the landscape.<br><br>**Overall,** the susceptibility of the Unwooded Vales is conditioned by managing growth, ensuring development is appropriate in terms of type, scale, and location. The flat, open landscape is also a key consideration and whilst the aim is to plan new tree planting around key settlements, woodland does not form a significant component of this landscape, and in considering its open and expansive character, extensive new woodland planting would be generally inappropriate.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Unwooded Vales appeal to the visual senses where the roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Northorpe Beck, provide local points of interest and the opportunity to capture views across the landscape to the higher landform fringing the Unwooded Vales at Kirton in Lindsey.<br><br>*Cultural:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as Northorpe. The landscape surrounding these settlements retain some rural and tranquil character with farms, but minor lanes and roads are interrupted by the presence of the former airfield. There are Roman roads that pass across the wider area such as Ermine Street indicating that these low-lying areas provided convenient routes through the hills and wetlands.<br><br>*Natural:* The extensive expanses of semi-natural habitat, rivers, and streams are an important landscape feature such as Northorpe Beck and its associated tributaries. Overall, in such a managed airfield biased and large-scale agricultural environment, networks of hedgerows and hedgerow trees gain significance in offering a refuge for birds and insects.<br><br>*Recreation and Enjoyment:* The Unwooded Vales are valued for recreation which often focuses on the locations where panoramic views are possible from elevated locations from rising land at the edges of the Vales. Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpse of neighboring elevated are often sufficient to provide a 'sense of place' and add to the recreation and enjoyment of the area. Typically, these locations occur around Blyton to the southwest and Willoughton to the southeast.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' with major landform features flanking the lower lying areas creating broad scale visual containment along the ridgeline to the east at Willhoughton, Blyborough and Grayingham. Wide panoramic views are also possible from the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Health and Wellbeing:* The Unwooded Vales provide a very limited network of ProW leading to the dependence on the routes that crisscross the area in all directions, linked by a series of narrow tracks that lead to isolated farmsteads, and which often create 'no-through roads' in the landscape.<br><br>*Important Spatial Function:* The landscape benefits from high levels of visual containment despite the low levels of woodland cover. Instead, the local landform, hedgerows and shelter belts create visual containment and give the Vales Landscape an intimate character.<br><br>**Overall,** the value of the Unwooded Vales is shaped by the strong former airfield use along with agricultural character, with wide areas retaining a strong sense of openness. In contrast, the low levels of woodland cover create a relatively expansive landscape. In recent decades, the productivity of the land has stimulated loss of pasture, loss of hedges and increase in field sizes. | *Character:* The roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Blyton Beck, provide local points of interest and the opportunity to capture views across the landscape.<br><br>*Quality:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as the Medieval village of Southorpe. The landscape surrounding these settlements retain some rural and tranquil character with farms, but minor lanes and roads are interrupted by the presence the former airfield in parts.<br><br>*Value:* Areas have a positive landscape character but include some areas of degradation where agricultural intensification has eroded landscape character, particularly around the edges of settlements.<br><br>*Capacity:* The landscape benefits from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures<br><br>A 2m buffer around the proposed development will be provided between construction areas and boundary fencing.<br><br>A max. 2.4m high steel palisade fence will surround all substation equipment.<br><br>Additional deer fencing is to be considered outside of this boundary – to be 2.5m high.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance is required.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium (Substation Site) | Medium (Substation Site) | **Medium** | |

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 3a – Substation Site) | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | The 132kv substation is set within the southern extents of Site 3a within field K7 and is located some 360m north of the Kirton Road. It measures 64m x 51m maximum including buffers, access roads and boundary fencing at 2.6m high. The height of the structure sits at 6.435m at its tallest for the high-level busbars and low-level busbars sitting at 3.995m. The substation is likely to take 12 months to construct. The access route will be via the B1205 Kirton Road east of Blyton village.<br><br>Integrated conversion units are laid out across the Sites to include transformers, inverters and switch gear. These are to be a maximum of 15m x 5m x 3.5m high and will therefore be seen within the context of the panelled areas.<br><br>Properties potentially affected: Blyton Park Race Track, The Fields, Fields Cottage and Fields Farm, Grange Farm, Top Farm entrance<br><br>Viewpoints potentially affected by the substation include:<br>59,60,61<br><br>Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground and lower-level activities would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited in number of views/potential receptors, being predominantly users of the Kirton Road and Blyton Park Race Track and relatively short term.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. | A very small section of the Cottam 3a Site lies within the Wooded Vales (4b), being field K1. This LCA is not affected by the substation development.<br><br>The remainder of the Site lies within the Unwooded Vales LCA 4a. The substation is to be relatively well contained within the Site and the size and location will mean that it will not unduly adversely affect the overall integrity of the Character Area.<br><br>Designations lie predominantly to the west/southwest of both the Cottam 3a and 3b Sites with Ancient Woodland, Local Nature Reserves and Local Wildlife Sites within the study area but having no physical or visual impact/influence on the Site(s) other than distant views where these may exist. Opportunities for reinforcement of the character area within both the Cottam 3a and 3b Sites are available.<br><br>Both Sites lie on the outer limits of the SSSI's impact risk zones of Scotton Becks Fields and Scotton Common. There will be no adverse effect in relation to the SSSI.<br><br>There are no Listed buildings within the Site of Cottam 3a or 3b but a small number within the village of Blyton, to the west, Pilham to the Southwest and Northorpe to the northeast, as well as The Railway Station adjacent to the Cottam 3b Site, and although their setting is not directly affected by development, general mitigation around the boundary of the Sites will help to ensure that these properties are not impacted. There are no direct views of the substation from these properties.<br><br>The land use will change from intensively managed arable land to an area of construction with associated hard standing, access roads.<br><br>The substation area will have limited adverse effects on the topography within the immediate area, the Site being relatively level. There will be some soil movement to accommodate the hard standing, access roads and structures required. The closest watercourses are located some 550m to the northeast with over watercourses some 400m to the south beyond the Kirton Road.<br><br>Across the Site, linear ditches and dykes which are currently abutted by vegetation will be enhanced to further delineate the field boundaries and minor | Secondary mitigation such as planting, and grass seeding would be taken into account at operation stage (Year 15) to include the following changes to the landscape:<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>Following mitigation, at Year 15, The existing woodland locally will be augmented by increased vegetation cover creating both visual and ecological links across the landscape to the adjoining woodland blocks. Grassland mixes will have established and will create valuable habitats with soil structure greatly improved through cessation of arable cultivation.<br><br>Following mitigation, the Site is able accommodate change without undue adverse effects and there will be beneficial effects across the Site generally in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area.<br><br>By Year 15, the Site at Cottam 3a will present a 'well treed' landscape in line with the character area aims, the existing vegetation having been allowed to grow out and new trees, hedgerows and scrub having fully established and begun to mature. The overall scene will be relatively well vegetated, with scattered and irregularly spaced trees, following the existing lines of both historic field boundaries and the road network as well as local watercourses.<br><br>The structures of the substation will be predominantly screened to a height of 5m by adjacent and intervening hedgerows with hedgerow trees having reached a height of 7.5m helping to soften views from across the wider landscape.<br><br>Following mitigation, the Site is able accommodate this change without undue adverse effects on the land use, heritage assets, local and national designations, the local PRoW network and natural resources. There will be some adverse effects in terms of the communication links locally which will become busier and limited adverse effects on the settlements locally with most views softened by proposed and existing vegetation by Year 15 to create a moderate adverse effect with regard to these receptors. A number of viewpoints will be affected and where views of the substation are available, this will have a moderately adverse effect on the receptors due to the limited height of this structure which can be mitigated to a great degree. Existing detracting features also have a bearing on the overall effects and the substation will be seen within the context of these other features. There will be considerable beneficial effects in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area. |

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| | There would also be landscape and biodiversity mitigation works around the substation, including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites creating a much greater level of vegetation locally, creating many associated beneficial effects.<br><br>These short-lived construction activities would not adversely affect the local woodlands, existing vegetation or designated areas. There would be a change to the arable land use with a small area of arable land being covered by the built form. The field boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new substation. There would be an increase in the level of traffic locally.<br><br>Overall, the landscape receptors, both within the Site and of the wider area, are able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all existing landscape features will be retained.<br><br>Overall, the main effects are those relating to an increased level of traffic and disruption locally during construction and the loss of a small area of agricultural land There will be very minor adverse effects on the settlements locally with views being very limited. Effects on other landscape receptors are considered Minor. | watercourses as well as adding to the green corridors and biodiversity value.<br><br>The proposed development will have little effect on local industry and commerce although the introduction of the solar farm will provide some additional traffic to the roads and lanes locally. Mitigation will be in the form of tree, hedge, and shelterbelt planting as well as shrub and grassland areas which will both mitigate views of the additional traffic and provide benefits in terms of reducing noise and carbon impacts.<br><br>The settlements locally (particularly those of Pilham and Blyton) will be protected through the proposed mitigation in and around the Site(s), with strong boundary vegetation screening views into the Site and enhancing the settlement settings where these abut the proposed development. The overall increase in vegetative cover and the reduction of over intensively farmed arable land will have benefits locally both in visual terms and with regard to a considerable increase in the biodiversity around settlements and isolated dwellings in the area.<br><br>There will be very minor enhancements to leisure pursuits within the locality with a small number of PRoW being enhanced through tree and hedge planting adjacent to the Sites. The PRoW running through the Cottam 3b Site will be much improved from the open, exposed route to a more secluded walk.<br><br>There are limited PRoW that have any close association with the substation either visually or physically. PRoW Corr/22/1 lies to the west of the Cottam 2 Site and lies to the southwest of the Cottam 3b Site. Within the Cottam 3b Site, Pilh/20/1 (footpath) runs east/west across the centre of the Site. The PRoW is currently very open in parts and provides a somewhat windswept route from Pilham Lane across to Bonsall Farm. There will however be very limited, if any views, north towards the proposed substation and these PRoW are not unduly affected by the development.<br><br>In terms of mitigation for the two AGLV's associated with this Site, due to their distance and varied relationship with the Site, it is the overall scheme of mitigation that will reinforce the landscape character where this has been lost or eroded in the last century to intensive arable farming. | character area of the 4a Unwooded Vales. Overall, at Year 15, the effect of the development of the substation will be reduced to Minor Moderate Adverse effects through mitigation. | |

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| | | Within the Cottam 3a Site, the following secondary mitigation will be implemented at the operation stage (Year 1) to enhance the regional landscape character:<br><br>Enhanced hedgerows along the northern boundary of the Kirton Road (southern boundary of the Site) will help to screen views of the substation to the north. A block of additional successional scrub is also proposed along this boundary, thickening the overall cover at low level. Hedgerow trees within this boundary will soften views of the upper parts of the substation structure.<br><br>To the west, views of the substation will be mitigated by additional new hedgerows around the eastern and western extents of industrial buildings on the old airfield along Kirton Road. The southern extents of this area are already well screened with evergreen vegetation, precluding views from further west along the Kirton Road and from Blyton village to the west.<br><br>A new hedgerow is proposed directly north of the substation with additional new hedgerows to the west of the access road and to the east of the substation adjacent to the motorsports circuit. Further new hedgerows are proposed across the Site to the north further screening views. A strong block of vegetation exists directly east of the substation with some additional vegetation on the boundary to the north.<br><br>A strong block of successional scrub to the western boundary of the Site of Cottam 3a will augment the existing vegetation here and provide good screening from the west and the settlement area.<br><br>A band of scrub is proposed to the western boundary of the bird mitigation area at the entrance to Blyton Park Race Track and this will help to soften views of the substation from the southeast and along the Kirton Road.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and the varied grassland areas will have become established, starting to create valuable habitats.<br><br>Overall, this will help to link habitats and strengthen the overall character locally and maintain a sense of place. Important opportunities to bolster the local vegetation cover, buffering and connecting existing fragmented vegetation, aims to create a more resilient and biodiverse landscape.<br><br>Overall, at Year 1, the limited road and PRoW network around the substation, together with some strong existing vegetation will limit views to the substation | | |

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| | | from many areas other than the Kirton Road which is a relatively fast and straight road. This area already has the strong detracting feature of the Racetrack with its associated noise, traffic and structures and the substation will be seen within the context of these features locally. There are limited adverse Landscape effects providing an overall Moderate Adverse Effect at Year 1. | | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |
| **Substation Site Cottam 3a: Land Use** | | | | |
| **Magnitude** | High | High | Medium | Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Moderate-Major **Significant** | Moderate-Major **Significant** | Moderate **Significant** | Minor **Not Significant** |
| **Substation Site Cottom 3a: Topography and Watercourses** | | | | |
| **Magnitude** | High | High | Medium | Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Moderate-Major **Significant** | Moderate-Major **Significant** | Moderate **Significant** | Minor **Not Significant** |

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 3a – Substation Site) | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects upon LCA – 4a of the Cottam 3a Substation and Cumulative Sites is Moderate at year 1 of operation and Minor at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, the segregated nature of the Sites; together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced in combination with the Substation.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to Figure 8.15.1.3 [C6.4.8.15.1.3] which shows that with the Cottam 3a Site, cumulative visibility with the Cottam 1 Site/Sites, Cottam 2 Site and Cottam 3b Site would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of intervisibility between Cottam 3a and 3b Site/Sites, extending from the:<br>• Northeast boundary of the Cottam 3a Site/Sites, defined to the west by the Green Respect Burial Park and Park House Farm, and reaching as far as Northorpe in the east<br>• East boundary of Cottam 3a Site/Sites, and stopping short of Cold Harbour Farm; and<br>• North boundary of the Cottam 3b Site/Sites, extending for a short distance as far as Grange Farm and Top Farm.<br><br>Potential cumulative visibility between the Cottam 3a and 3b Site/Sites would not be experienced however, due to the intervening vegetation bordering the mainline railway and the isolated settlement comprising Grange Farm and Top Farm. The flat landform and intervening woodland blocks, hedgerows and tree cover would also close down any inter-visibility across the landscape between these cumulative sites.<br><br>There are local patches of intervisibility between the Cottam 3a, 3b and Cottam 2 Sites, extending from the:<br>• South boundary of the Cottam 3b Site, bordered by Pilham to the west and the medieval settlement of Dunstall to the east, and reaching as far as Springthorpe in the south<br>• South boundary of the Cottam 3a Site, bordered by the eastern edge of Blyton to the west, reaching Grange Farm and stopping short of the mainline railway; and<br>• North boundary of the Cottam 3a Site, following the alignment of the A159 (Laughton Road) and stopping short to the west of the Green Respect Burial Park.<br><br>Potential cumulative visibility between the Cottam 3a, 3b and the Cottam 2 Sites would not be experienced however, due to the intervening settlements of Corringham, Yawthorpe, Aisby, Dunstall and Pilham. The flat landform and intervening vegetation cover would also close down any inter-visibility across the landscape between these cumulative sites.<br><br>There is a local patch of intervisibility between All Sites, located to the: | *In Summary*<br>The Cumulative Effects upon LCA – 4a of the Scheme (**including** substations) and Cumulative Developments is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced in combination with the Substation.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a and 3b Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 3a Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3a Site would not alter the overall character of the landscape within the Unwooded Vales Character Area 4a. |

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| | • East of the Cottam 3b Site and north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe.<br><br>Potential cumulative visibility between All Sites would not be experienced however, due to the intervening settlements of Corringham, Yawthorpe, Aisby, Dunstall and Pilham. The flat landform and intervening vegetation cover would also close down and inter-visibility across the landscape between these cumulative sites.<br><br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3a Site would not alter the overall character of the landscape within the Unwooded Vales Character Area 4a. | |
| **Magnitude** | Construction: Medium<br>Operation (Year 1): Medium<br>Operation (Year 1): **with only** Embedded Mitigation: Medium<br>Operation (Year 15): Low<br>Decommissioning: Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Moderate **Significant**<br>Operation (Year 1): Moderate **Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Moderate **Significant**<br>Operation (Year 15): Minor **Not Significant**<br>Decommissioning: Minor **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |

**Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 3b – Substation Site)**

**Receptor Baseline:**

Within the Cottam 3b Site, at a regional scale, landscape character is assessed within the **East Midlands Regional Landscape Character Assessment** as forming part of RLCT Profile: 4a Unwooded Vales, which is shown on **Figure 8.5 [C6.4.8.5]**. Unwooded Vales extends into the eastern section of the 2km Study Area and shares a boundary with the 'Built Up Area' that extend eastwards from Gainsborough towards Blyton following the main transport route of the A159 (Thonock Road). The Unwooded Vales also extends into the 5km Study Area and shares a boundary with RLCT Profile 6a: Limestone Scarps and Dipslopes. The settlements of Grayingham, Blyborough, Willhoughton and Hemswell are located close to the 5km Study Area boundary with RLCT Profile 4a: Unwooded Vales and RLCT 6a: Limestone Scarps and Dipslopes.

**Key Features:**

This is the land area that sits to the south of the mainline railway and to the east of Pilham Lane. To the northeast of the 2km Study Area the settlement of Northorpe occupies an area of locally higher ground at 20m AOD. The Cottam 3b Site therefore spans two different landscape character types with the majority located within Unwooded Vales whilst the western most corner of the Site/Sites (close to Blyton) is within the 'Built Up Area' which is associated with the main highway corridor of the A159 (Thonock Road). Unwooded Vales comprises an extensive, low lying rural landscape underlain by Triassic and Jurassic mudstones and clays and widespread superficial deposits. This landscape character type offers expansive long distance and panoramic views from higher ground at the margin of the Unwooded Vales which gives a sense of visual containment. The land within this landscape character type has complex drainage patterns of watercourses that flow within shallow undulations often flanked by pasture and riparian habitats. Limited woodland cover is a key characteristic of the Unwooded Vales and this therefore relies on shelterbelts and hedgerow trees to gain a greater visual significance and habitat value. The landscape within this landscape character type is sparsely settled with small villages and dispersed farms linked by quiet rural lanes.

**Character Context:**

The Cottam 3b Site is mainly located within RLCT 4a: Unwooded Vales landscape character type, where the land area is found to the south of Kirton Road B1205 (and mainline railway) and to the northeast of the settlement of Pilham and east of the settlement of Blyton where it forms the boundary with the adjoining RLCT 4b: Wooded Vales. To the east of the Cottam 3b Site, the settlement comprises a wider collection of scattered farmsteads. The ridgeline (further to the east) then gives strong containment where the settlements of Grayingham, Blyborough and Willhoughton mark the boundary with the B1398.

RLCT 4a: Unwooded Vales landscape character type is host to the Cottam 3b Site within the 2km study area and the 5km study area.

RLCT 4a is considered to form part of the immediate landscape context for the Cottam 3b Site.

| Receptor susceptibility to change | Value of Receptor | Sensitivity | Embedded Mitigation |
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| In terms of forces for change, the Unwooded Vales aims to protect existing rural landscape features, in particular the restoration of hedgerows since the most widespread change has been in agricultural intensification and the change from pastoral to arable cropping that has resulted in the loss of hedges, and consequently, an increase in filed size. The loss of pasture is particularly evident around settlements, where grazing animals and smaller field sizes contribute to the setting and structure of several villages. Many of the rural villages have not seen widespread expansion but development pressures continue with the demand for housing, commerce and industry is creating visual intrusion and extending the urban fringe.<br><br>**Overall,** the susceptibility of the Unwooded Vales is conditioned by managing growth, ensuring development is appropriate in terms of type, scale, and location. The flat, open landscape is also a key consideration and whilst the aim is to plan new tree planting around key settlements, woodland does not form a significant component of this landscape, and in considering its open and expansive character, extensive new woodland planting would be generally inappropriate.<br><br>The landscape receptor is moderately susceptible to the proposed development, and a moderate ability to accommodate the specific proposed change, because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and/or achievement of relevant planning policies and strategies. | *Scenic:* The Unwooded Vales appeal to the visual senses where the roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Blyton Beck, provide local points of interest and the opportunity to capture views across the landscape to the higher landform fringing the Unwooded Vales at Kirton in Lindsey.<br><br>*Cultural:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as the Medieval village of Southorpe. The landscape surrounding these settlements retain some rural and tranquil character with farms, but minor lanes and roads are interrupted by the presence the former airfield in parts. There are Roman roads that pass across the wider area such as Ermine Street indicating that these low-lying areas provided convenient routes through the hills and wetlands.<br><br>*Natural:* There are extensive expanses of semi-natural habitat and rivers, and streams are an important landscape feature such Blyton Beck and its associated tributaries. Overall, in such a managed airfield biased and large-scale agricultural environment, networks of hedgerows and hedgerow trees gain significance in offering a refuge for birds and insects.<br><br>*Recreation and Enjoyment:* The Unwooded Vales are valued for recreation which often focuses on the locations where panoramic views are possible from elevated locations from rising land at the edges of the Vales. Whilst the landform of the Unwooded Vales is typically low and subdued, rising landform often provides locations where glimpse of neighboring elevations are often sufficient to provide a 'sense of place' and add to the recreation and enjoyment of the area. Typically, these locations occur around Blyton to the west and Willoughton to the southeast.<br><br>*Local Distinctiveness and Sense of Place:* The landscape has a 'strong sense of place' with major landform features flanking the lower lying areas creating broad scale visual containment along the ridgeline to the east at Willhoughton, Blyborough and Grayingham. Wide panoramic views are also possible from the low hills and ridges that form watersheds between watercourses. This contrasts with the lower lying areas where intact hedgerows and belts of riverside trees truncate views.<br><br>*Health and Wellbeing:* The Unwooded Vales provide a very limited network of PRoW leading to the dependence on the more routes that crisscross the area in all directions, linked by a series of narrow tracks that lead to isolated farmsteads, and which often create 'no-through roads' in the landscape.<br><br>*Important Spatial Function:* The landscape benefits from high levels of visual containment despite the low levels of woodland cover. Instead, the local landform, hedgerows and shelter belts create visual containment and give the Vales Landscape an intimate character.<br><br>**Overall,** the value of the Unwooded Vales is shaped by the strong agricultural character and presence of the mainline railway, with wide areas retaining a strong sense of openness. Woodland cover does also not form a significant component in this relatively expansive landscape. In recent decades, the demand for housing, commerce and industry is creating visual intrusion and extending development pressures into the countryside. | *Character:* The roads and watercourses combine to give a subtle grain to the landscape. The interruptions at the bridge crossings, such as Blyton Beck, provide local points of interest and the opportunity to capture views across the landscape.<br><br>*Quality:* The landscape shows evidence of historic settlement with farms and nucleated villages and small hamlets such as the Medieval village of Southorpe. The landscape surrounding these settlements retain some rural and tranquil character with farms, but minor lanes and roads are interrupted by the presence the former airfield in parts.<br><br>*Value:* Areas have a positive landscape character but include some areas of degradation where agricultural intensification has eroded landscape character, particularly around the edges of settlements.<br><br>*Capacity:* The landscape benefits from high levels of visual containment due to the local landform, hedgerows, and shelter belts and this helps tolerance for landscape change. | Embedded Mitigation would be taken into account at the construction, operation (Year 1 and Year 15) and decommissioning stages of the Scheme. This Embedded Mitigation is also referred to as primary mitigation and would include the following measures:<br><br>A 2m buffer around the proposed development will be provided between construction areas and boundary fencing.<br><br>A max 2.4m high steel palisade fence will surround all substation equipment.<br><br>Additional deer fencing is to be considered outside of this boundary – to be 2.5m high.<br><br>Existing hedges are to be allowed to grow out and will be managed to a height of 5m. Hedgerow trees will be encouraged to grow out with the addition of new hedgerow trees as appropriate, randomly spaced along the length of existing hedges.<br><br>Lighting will be limited to downlights within substations and battery banks only and used when maintenance is required.<br><br>The landscape effects **with only** the Embedded Mitigation taken into account equate to those effects set out for the operation stage (Year 1) and this includes secondary mitigation which will have been carried out but will have had limited physical or landscape character impact at this Embedded Mitigation stage. |
| Medium (5km Study Area) | Medium (5km Study Area) | **Medium** | |
| Medium (Substation Site) | Medium (Substation Site) | **Medium** | |

| Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 3b – Substation Site) | | | | |
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| | **Construction** | **Operation (Year 1)** | **Operation (Year 15)** | **Decommissioning** |
| | The 132kv substation is set within the southern extents of Site 3b within field J4 and is located some 320m northeast of Pilham Lane at its closest. It measures 64m x 51m maximum including buffers, access roads and boundary fencing at 2.6m high. The height of the structure sits at 6.435m at its tallest for the high-level busbars and low-level busbars sitting at 3.995m. The substation is likely to take 12 months to construct.<br><br>Integrated conversion units are laid out across the Sites to include transformers, inverters and switch gear. These are to be a maximum of 15m x 5m x 3.5m high and will therefore be seen within the context of the panelled areas.<br><br>Properties potentially affected: Glebe Farm looking East, Bonsdale Farm looking west Potentially properties in Aisby looking North long distance, lots of intervening vegetation.<br><br>Viewpoints potentially affected by the substation include: 55, 56, 58<br>Activities during site preparation / enabling works, construction, and commissioning with effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site. At the early stages of the construction stage, ground and lower-level activities would predominantly be screened by existing vegetation.<br><br>During the latter part of the construction stage, views would become available of the elevated activities above the hedgerows, but these would be limited in number of views/potential receptors, being predominantly users of the PRoW Phil/20/1 and road users and residents around Bonsdale Farm, with potential views across from the railway line.<br><br>Other works would be undertaken in connection with the construction including fencing, gates, boundary treatment and other means of enclosure and works for the provision of security and monitoring measures such as CCTV and the laying down of internal tracks. There would also be landscape and biodiversity mitigation works around the substation, | Within the Cottam 3b Site, the following secondary mitigation will be implemented at the operation stage (Year 1) to enhance the regional landscape character:<br><br>The Site lies within the Unwooded Vales LCA 4a. The substation is to be relatively well contained within the Site and the size and location will mean that it will not unduly adversely affect the overall integrity of the Character Area.<br><br>Designations lie predominantly to the west/southwest of both the Cottam 3a and 3b Sites with Ancient Woodland, Local Nature Reserves and Local Wildlife Sites within the study area but having no physical or visual impact/influence on the Site(s) other than distant views where these may exist. Opportunities for reinforcement of the character area within both the Cottam 3a and 3b Sites are available.<br><br>Both Sites lie on the outer limits of the SSSI's impact risk zones of Scotton Becks Fields and Scotton Common. There will be no adverse effect in relation to the SSSI.<br><br>There are no Listed buildings within the Site of Cottam 3a or 3b but a small number within the village of Blyton, to the west, Pilham to the Southwest and Northorpe to the northeast, as well as The Railway Station adjacent to the Cottam 3b Site, and although their setting is not directly affected by development, general mitigation around the boundary of the Sites will help to ensure that these properties are not impacted. There are no direct views of the substation from these properties. In particular, the Railway Station has limited view due to good levels of intervening vegetation.<br><br>The land use will change from intensively managed arable land to an area of construction with associated hard standing, access roads and potential for some pollution to the soils locally.<br><br>The substation area will have limited adverse effects on the topography within the immediate area, the Site being relatively level. There will be some soil movement to accommodate the hard standing, access roads and structures required. There is one small pond within the Site closest watercourses are located to the south beyond Pilham Lane.<br><br>The proposed development will have little effect on local industry and commerce although the introduction of the solar farm will provide some additional traffic to the roads and lanes locally. Mitigation will be in the form of | Secondary mitigation such as planting, and grass seeding would be taken into account at operation stage (Year 15) to include the following changes to the landscape:<br><br>Growth of existing and proposed vegetation is assumed to be:<br><br>Woodland/trees and shelterbelts: 2.5m max at Year 1, 7.5m max at Year 15.<br><br>New hedgerows: 0.6m at Year 1 and 3.5m at Year 15.<br><br>Existing hedgerows: 0.9m at Year 1 and 5m at Year 15.<br><br>Shrubs: 0.9m at Year 1 and 5m at Year 15.<br><br>Following mitigation, at Year 15, The existing woodland locally will be augmented by increased vegetation cover creating both visual and ecological links across the landscape to the adjoining woodland blocks. Grassland mixes will have established and will create valuable habitats with soil structure greatly improved through cessation of arable cultivation.<br><br>Following mitigation, the Site is able accommodate change without undue adverse effects and there will be beneficial effects across the Site generally in the increased level of vegetation cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area.<br><br>By Year 15, the Site at Cottam 3b will present a 'well treed' landscape in line with the character area aims, the existing vegetation having been allowed to grow out and new trees, hedgerows and scrub having fully established and begun to mature. The overall scene will be relatively well vegetated, with scattered and irregularly spaced trees, following the existing lines of both historic field boundaries and the road network.<br><br>The structures of the substation will be predominantly screened to a height of 5m by adjacent and intervening hedgerows with hedgerow trees having reached a height of 7.5m helping to soften views from across the wider landscape.<br><br>Following mitigation, the Site is able accommodate this change without undue adverse effects on the land use, heritage assets, local and national designations and natural resources. There will be some adverse effects in terms of the communication links locally which will become busier and limited adverse effects on the settlements locally with most views softened by proposed and existing vegetation by Year 15. The PRoW within the Site will be adversely affected but by Year 15, the existing vegetation will have grown out to 5m and trees will have reached 7.5m softening any views of the substation from this route. Overall the impacts create a moderate adverse effect with regard to these receptors. A number of viewpoints will be affected and where views of the substation are available, this will have a moderately adverse effect on the receptors due to the limited height of this structure which can be mitigated to a great degree. Existing detracting features also have a bearing on the overall effects and the substation will be seen within the context of these other features. There will be beneficial effects in the increased level of vegetation | A similar process to that of construction stage, but with the Scheme being no longer operational. This is an assessment of the Site in winter but assumes retention of existing vegetation and builds upon the proposed primary and secondary mitigation that had been established as the future baseline. Effects are those arising from activities for the duration of the decommissioning to include site traffic, noise and vibration from decommissioning activities, dust generation and site runoff. Shelterbelts will have been provided to increase the level of tree cover and link vegetation locally.<br><br>Following decommissioning, the land is likely to be returned to arable production. The Site will however benefit from the significantly enhanced tree and hedgerow planting that has been carried out and has matured to create a much stronger and robust landscape, retaining and enhancing the overall character and providing considerable biodiversity benefits over the years. Bird mitigation fields are likely to be retained and the potential may exist to retain grass margins to maintain some varied land use and a high level of biodiversity in the local area. |

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| | including planting and the improvement of existing hedgerows to all boundaries of the Site/Sites creating a much greater level of vegetation locally, creating many associated beneficial effects.<br><br>These short-lived construction activities would not adversely affect the local woodlands, existing vegetation or designated areas. There would be a change to the arable land use with a small area of arable land being covered by the built form. The field boundaries and the associated tree cover would remain intact and help with visual layering across the landscape and the integration of the new substation. There would be an increase in the level of traffic locally.<br><br>Overall, the landscape receptors, both within the Site and of the wider area, are able to accommodate the changes that arise through the construction of the Site without undue adverse effects. The integrity of all existing landscape features will be retained.<br><br>Overall, the main effects are those relating to an increased level of traffic and disruption locally during construction, the loss of a small area of agricultural land and potential for ground pollution which will need to be carefully managed. There will be very minor adverse effects on the settlements locally with views being very limited. Effects on other landscape receptors are considered Minor. | tree, hedge, and shelterbelt planting as well as shrub and grassland areas which will both mitigate views of the additional traffic and provide benefits in terms of reducing noise and carbon impacts.<br><br>The settlements locally (particularly those of Pilham, Aisby and Blyton) will be protected through the proposed mitigation in and around the Site, with strong boundary vegetation screening views into the Site and enhancing the settlement settings where these abut the proposed development. The overall increase in vegetative cover and the reduction of over intensively farmed arable land will have benefits locally both in visual terms and with regard to a considerable increase in the biodiversity around settlements and isolated dwellings in the area.<br><br>There will be very minor enhancements to leisure pursuits within the locality with a small number of PRoW being enhanced through tree and hedge planting adjacent to the Sites.<br><br>There are limited PRoW that have any close association with the substation either visually or physically. Within the Cottam 3b Site, Pilh/20/1 (footpath) runs east/west across the centre of the Site. The PRoW is currently very open in parts and provides a somewhat windswept route from Pilham Lane across to Bonsdale Farm. Views from this PRoW will be adversely affected in close and mid range views but reduced due to existing vegetation to the south of this route.<br><br>In terms of mitigation for the two AGLV's associated with this Site, due to their distance and varied relationship with the Site, it is the overall scheme of mitigation that will reinforce the landscape character where this has been lost or eroded in the last century to intensive arable farming.<br><br>Within the Cottam 3b Site, the following secondary mitigation will be implemented at the operation stage (Year 1) to enhance the regional landscape character:<br><br>The existing hedgerow along the PRoW is well managed but low. This willl be allowed to grow out and hedgerow trees will be added to help break up views of the substation and provide additional tree cover locally. A new hedgerow to the north of this PRoW will furhter screen the substation from views from the north.<br><br>The existing hedgerow directly west of the substation will be enhanced and allowed to grow out to 5m with the addition of hedgerow trees.<br><br>Hedgerows to the south of the Site will also be enhanced creating a layered effect when viewed across | cover locally, the linking and enhancement of existing natural features and the biodiversity benefits that this will bring, creating a stronger, more resilient framework across the local character area of the 4a Unwooded Vales.<br><br>Overall with all receptors taken into account, at Year 15, the effect of the development of the substation will be reduced to Minor Moderate Adverse effects through mitigation. | |

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| | | the landscape, particularly screening views from the south and along Pilham Lane/Green Lane, which although well vegetated along its route, does have gaps creating views north.<br><br>A block of successional scrub is proposed to the south of the railway line which will help to form a buffer and soften views south from the train.<br><br>A new hedgerow is proposed to the western boundary of the Site (northern section) which will help mitigate any potential views from The Railway Station and views from the west along Station Road. Further new and enhanced hedgerows running north south across the Site will further soften views from the northwest.<br><br>A new hedgerow on the eastern boundary (southern section of the Site south of the PRoW) of the Site will help to mitigate views from Bonsdale Farm whilst existing hedges will be enhanced along the northern section of the eastern boundary adjacent to the road, softening views from further northeast.<br><br>Although new vegetation will be immature, existing hedgerows will have begun to grow out at Year 1 and the varied grassland areas will have become established, starting to create valuable habitats.<br><br>Overall, this will help to link habitats and strengthen the overall character locally and maintain a sense of place. Important opportunities to bolster the local vegetation cover, buffering and connecting existing fragmented vegetation, aims to create a more resilient and biodiverse landscape.<br><br>Overall, at Year 1, some strong existing vegetation will limit views to the substation from many areas other than the Pilham Lane to the south and the unnamed road (Bonsall Lane) to the east. The railway is a detracting feature locally with its associated noise and structures and the substation will be seen within the context of these features locally. There are limited adverse Landscape effects with regard to other features providing an overall Moderate Adverse Effect at Year 1. | | |
| **5km Study Area:** | | | | |
| **Magnitude** | Very Low | Low | Low | Very Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Negligible **Not Significant** | Minor **Not Significant** | Minor **Not Significant** | Negligible **Not Significant** |
| **Substation Site Cottam 3b: Land Use** | | | | |

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| **Magnitude** | High | High | Medium | Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Moderate-Major **Significant** | Moderate-Major **Significant** | Moderate **Significant** | Minor **Not Significant** |
| **Substation Site Cottam 3b: Topography and Watercourses** | | | | |
| **Magnitude** | High | High | Medium | Low |
| **Level of Effect** | Adverse & Short Term | Adverse & Long Term | Adverse & Long Term | Neutral & Short Term |
| **Significance of Effect** | Moderate-Major **Significant** | Moderate-Major **Significant** | Moderate **Significant** | Minor **Not Significant** |

| Landscape Receptor – Regional Scale Landscape Character – 4a: Unwooded Vales (Cottam 3b – Substation Site) | | |
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| | **In-Combination Effects [Cumulative Sites]** | **Cumulative Effects [Cumulative Developments]** |
| | *In Summary*<br>The In-combination effects upon LCA – 4a of the Cottam 3b Substation and Cumulative Sites is Moderate at year 1 of operation and Minor at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, the segregated nature of the Sites; together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced in combination with the Substation.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3b Site, cumulative visibility with the Cottam 1 Site/Sites, Cottam 2 Site and Cottam 3b Site would not be experienced across the majority of the 2km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of intervisibility between Cottam 3a and 3b Site/Sites, extending from the:<br>• Northeast boundary of the Cottam 3a Site, defined to the west by the Green Respect Burial Park and Park House Farm, and reaching as far as Northorpe in the east<br>• East boundary of Cottam 3a Site, and stopping short of Cold Harbour Farm; and<br>• North boundary of the Cottam 3b Site, extending for a short distance as far as Grange Farm and Top Farm.<br><br>Potential cumulative visibility between the Cottam 3a and 3b Site/Sites would not be experienced however, due to the intervening vegetation bordering the mainline railway and the isolated settlement comprising Grange Farm and Top Farm. The flat landform and intervening woodland blocks, hedgerows and tree cover would also close down any inter-visibility across the landscape between these cumulative sites.<br><br>There are local patches of intervisibility between the Cottam 3a, 3b and Cottam 2 Sites, extending from the:<br>• South boundary of the Cottam 3b Site, bordered by Pilham to the west and the medieval settlement of Dunstall to the east, and reaching as far as Springthorpe in the south<br>• South boundary of the Cottam 3a Site, bordered by the eastern edge of Blyton to the west, reaching Grange Farm and stopping short of the mainline railway; and<br>• North boundary of the Cottam 3a Site, following the alignment of the A159 (Laughton Road) and stopping short to the west of the Green Respect Burial Park.<br><br>Potential cumulative visibility between the Cottam 3a, 3b and the Cottam 2 Sites would not be experienced however, due to the intervening settlements of Corringham, Yawthorpe, Aisby, Dunstall and Pilham. The flat landform and intervening vegetation cover would also close down any inter-visibility across the landscape between these cumulative sites.<br><br>There is a local patch of intervisibility between All Sites, located to the: | *In Summary*<br>The Cumulative Effects upon LCA – 4a of the Scheme (**including** Substations) and Cumulative Developments is Minor at year 1 of operation and Negligible at year 15 with mitigation. This is due to the limited impact upon the LCA as a result of the nature of the Scheme, together with the existing landscape character associated with the fabric of the landscape of the Sites and Study Area. Embedded and Secondary Mitigation proposed would screen the panels and therefore the effects upon landscape character are reduced in combination with the Substation.<br><br>*Fabric of the Landscape*<br>There would not be the removal of or changes in individual elements or features of the landscape within the character area.<br><br>There would be the introduction of new elements and features comprising the solar panel areas and the substation area.<br><br>*Aesthetic Aspects of the Landscape*<br>Refer to **Figure 8.15.1.3 [C6.4.8.15.1.3]** which shows that with the Cottam 3a and 3b Sites, cumulative visibility with the cumulative developments would not be experienced across the majority of the 5km study area. This is due to the distance, the intervening woodlands, hedgerows, and tree cover between the Site/Sites. The intervening settlements and built form would also curtail cumulative visibility between these Site/Sites.<br><br>There are local patches of cumulative visibility which may be focus of likely significant effects, between the Cottam 3a Site and Tillbridge Solar. This cumulative visibility is set out in further detail within the following figures:<br><br>**Figure 8.15.2.8** Cottam 1, 2, 3a and 3b Tillbridge Solar Cumulative Developments Augmented ZTV **[C6.4.8.15.2.8]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3b Site would not alter the overall character of the landscape within the Unwooded Vales Character Area 4a. |

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| | • East of the Cottam 3b Site and north of the Bonsdale Farm at Pilham, extending across the landscape to the north of the medieval village of Dunstall as far as the medieval village of Southorpe.<br><br>Potential cumulative visibility between All Sites would not be experienced however, due to the intervening settlements of Corringham, Yawthorpe, Aisby, Dunstall and Pilham. The flat landform and intervening vegetation cover would also close down and inter-visibility across the landscape between these cumulative sites.<br>Users of linear routes, especially footpaths or other rights of way, or transport routes, may potentially experience the aesthetic aspects of the cumulative sites revealed in succession as a series of sequential views. For further details refer to the following detailed visual receptor sheets:<br><br>**Appendix 8.3.2.2** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.2]**<br>**Appendix 8.3.2.3** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.3]**<br>**Appendix 8.3.2.4** Individual Viewpoint Receptor Sheets **[C6.3.8.3.2.4]**<br><br>**Appendix 8.3.3.2** Individual Residential Receptor Sheets **[C6.3.8.3.3.2]**<br>**Appendix 8.3.3.3** Individual Residential Receptor Sheets **[C6.3.8.3.3.3]**<br><br>**Appendix 8.3.4.2** Individual Transport Receptor Sheets **[C6.3.8.3.4.2]**<br>**Appendix 8.3.4.3** Individual Transport Receptor Sheets **[C6.3.8.3.4.3]**<br><br>**Appendix 8.3.5.2** Individual PRoW Receptor Sheets **[C6.3.8.3.5.2]**<br>**Appendix 8.3.5.3** Individual PRoW Receptor Sheets **[C6.3.8.3.4.3]**<br><br>*Overall Landscape Character of the Unwooded Vales*<br>Overall, the character of the Unwooded Vales is shaped by the strong agricultural presence, with wide areas retaining a strong sense of rural tranquility. In contrast, the low levels of woodland cover create a relatively open and expansive landscape comprising an arable land use within a scattered pattern of settlement, linked by a series of minor roads east to west and a more strategic road network north to south. These relevant characteristics of the landscape have some ability to accommodate change without undue adverse effects. The cumulative visibility for the Cottam 3b Site would not alter the overall character of the landscape within the Unwooded Vales Character Area 4a. | |
| **Magnitude** | Construction: Medium<br>Operation (Year 1): Medium<br>Operation (Year 1): **with only** Embedded Mitigation: Medium<br>Operation (Year 15): Low<br>Decommissioning: Low | Construction: Low<br>Operation (Year 1): Low<br>Operation (Year 1): **with only** Embedded Mitigation: Low<br>Operation (Year 15): Very Low<br>Decommissioning: Very Low |
| **Type of Effect** | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term | Construction: Adverse & Short Term<br>Operation (Year 1): Adverse & Long Term<br>Operation (Year 1): **with only** Embedded Mitigation: Adverse & Long Term<br>Operation (Year 15): Neutral & Long Term<br>Decommissioning: Neutral & Short Term |
| **Significance of Effect** | Construction: Moderate **Significant**<br>Operation (Year 1): Moderate **Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Moderate **Significant**<br>Operation (Year 15): Minor **Not Significant**<br>Decommissioning: Minor **Not Significant** | Construction: Minor **Not Significant**<br>Operation (Year 1): Minor **Not Significant**<br>Operation (Year 1): **with only** Embedded Mitigation: Minor<br>Operation (Year 15): Negligible **Not Significant**<br>Decommissioning: Negligible **Not Significant** |