

Hornsea Offshore Wind Farm

Project Two

Environmental Statement
Volume 6 – Onshore

Annex 6.5.8
Representative Visual Receptors for
Onshore HVDC Converter/HVAC
Substation PINS Document Reference: 7.6.5.8
APFP Regulation 5(2)(a)

January 2015

smartwind.co.uk

SMart Wind Limited

**Hornsea Offshore Wind Farm
Project Two – Environmental Statement**

Volume 6 – Onshore

Annex 6.5.8 - Representative Visual Receptors for Onshore HVDC Converter/HVAC
Substation

Copyright © 2015

All pre-existing rights reserved.

Liability

This report has been prepared by RPS, with all reasonable skill, care and diligence within the terms of their contracts with SMart Wind Ltd or their subcontractor to RPS placed under RPS' contract with SMart Wind Ltd as the case may be.

Document release and authorisation record

PINS document reference	7.6.5.8
Report Number	UK06-050700-REP-0040
Date	January 2015
Client Name	SMart Wind Limited

SMart Wind Limited
11th Floor
140 London Wall
London
EC2Y 5DN

Tel 0207 7765500

Email info@smartwind.co.uk

Table of Contents

1 Representative Visual Receptors for the Onshore HVDC Converter/HVAC Substation....1

Table of Tables

Table 1.1 Representative Visual Receptors for the Onshore HVDC Converter/HVAC Substation 1

1 REPRESENTATIVE VISUAL RECEPTORS FOR ONSHORE HVDC CONVERTER/HVAC SUBSTATION

- 1.1.1 Only those visual receptors inside the study area have been considered below, with the exception of the Lincolnshire Wolds AONB, Brocklesby Park RPaG, and East and West Lindsey's AGLVs as the closest designated landscapes.
- 1.1.2 Any Figures referred to in the table are those found within Environmental Statement at Volume 3, Chapter 5: Landscape and Visual Resources.

Table 1.1 Representative Visual Receptors for the Onshore HVDC Converter/HVAC Substation.

Visual receptor / viewpoint location	Receptor type	Distance to proposed onshore HVDC converter/HVAC substation	Description of existing view
Close Range Receptors (up to 1 km)			
Residential Receptors			
Properties along Brick Lane, East Halton	Residential	566m	<p>The properties along Brick Lane are seen between much vegetation on either side of lane. A derelict property on the south side of lane also screens views towards the proposed site. As the lane changes direction from north-east to east, there are views of overhead lines (OHLs), stacks and storage tanks at the oil refineries. Some properties are single storey but most are two storeys. Most are set within well-vegetated gardens and grounds. There is one field that is slightly more open than the others in the vicinity. This lies to the south of Brick Lane. A large amount of new tree planting has recently taken place within this field.</p> <p>The end of the lane turns south and its name changes to Dean Street, a public byway. At the corner, lies Fairfield (a two storey property). Views from the rear of the property are across an arable field through a gappy hedgerow. The field is bounded by mature vegetation and there has been recent tree planting on the adjoining (power station) land. However, views remain of the industrial areas beyond.</p> <p>Baysgarth Farm, East Halton, appears to have a large farmhouse on Townside road, to the north of Brick Lane. Another house associated with the farm is set back from Townside. This is reached along a track that passes a farmstead. Although there is no vegetation in the immediate vicinity of this second property, the views towards the proposed site are partly screened by the well-established copses, mature hedgerows and hedgerow trees that form the boundaries of vegetation around the small pastoral fields close to the village, as well as the well-vegetated gardens along Brick Lane.</p>
Properties along Scrub Lane, East Halton	Residential	664m	<p>To the north of Brick Lane lies Scrub Lane. The properties along Scrub Lane are a mix of bungalows and two storey properties. There are limited views from amongst the properties, as intervening (garden) vegetation prevents most views. The end property on the south side of the lane has a more open view over a field, but tall hedgerows and mature trees screen much of the industry beyond. A derelict house and vegetation help screen views towards the proposed site from the properties on the north side of the road. Once past the field boundary, marking the eastern edge of the moated proposed site, the views are more open again over a large field. The OHLs and towers, flare stacks and stacks on the power stations can be clearly seen. Lower elements of the power station are a little less visible, due to the intervening hedgerows.</p>

	Visual receptor / viewpoint location	Receptor type	Distance to proposed onshore HVDC converter/HVAC substation	Description of existing view
	Properties along Swinster Lane, East Halton	Residential	700m-900m	Townside Farm is located on the south side of the junction of Swinster Lane with Townside. There is a mix of farm buildings, bungalows and two storey properties along the lane. One notable feature is the dense line of conifer trees on the south side of the lane, extending south and screening views. Most of the vegetation along the road is gardenesque, the smaller trees and shrubs, providing little screening, although there are a few larger native trees along the road. Most of the larger trees are within the back gardens of properties. In between houses the fields are small, well-hedged and pastoral, some are paddocks. Towards the end of the lane, the amount of roadside vegetation increases to the north and south of the road. The properties at the end of the lane might have more open views of across fields, at ground level were it not for the mature boundary planting, mature hedgerows and trees which help to screen the lower elements of the industrial areas.
	Kettlebridge Lane, East Halton	Residential	800m	Views from the properties along the lane are limited by other properties to a large extent. Barns located close to the properties further along the lane (to the east) also screen all but the top of the power station stacks. The end property (a farm) enjoys slightly less restricted views. The small pastoral fields immediately surrounding the property have well-established mature hedgerows, and contain some large hedgerow trees which prevent most views of the industrial development. However, the stacks of the E.ON power station remain visible. Although some of the small fields towards the proposed site have been merged into larger areas, enough mature vegetation remains to the south to break up views of the industrial areas.
	Properties along Lease Lane, East Halton	Residential	900m- 1.04 km	Most of the properties are bungalows and lie on the south side of the lane. Lease Farm is situated at the north-east end of the lane. This two storey farm has several barns and outbuildings to the east and south which partly screen views towards the proposed site. There is also another two storey property on the southern spur of Lease Lane. The properties along Lease Lane have more open views across fields. Properties located on the southern section of Lease Lane are surrounded by small pastoral fields with well-established hedgerows. The vegetation prevents most views towards the proposed site from ground level. However, the stacks of the power stations are still visible.
Community Receptors				
	St. Peter's Church, East Halton	Community	950m	St Peter's Church is situated on the eastern side of Townside, the road running between North Killingholme and East Halton. It is set back from the road, and has mature trees (some evergreen) along its boundary. There are limited views towards the proposed site due to vegetation.
	Village Hall, East Halton	Community	970m	The Hall, located on Townside Road (to the north of Swinster Lane) has a car park with little vegetation surrounding it. Views from the car park are over open fields to properties and their surrounding vegetation along Swinster Lane. The stacks of the power stations are visible, but vegetation screens the lower elements.
	Post Office, East Halton	Community	940m	This is situated in the central part of East Halton to the east of Townside. No views towards the proposed onshore HVDC converter/HVAC substation site are possible as it is surrounded by residential properties.
Industrial and Commercial Receptors				

	Visual receptor / viewpoint location	Receptor type	Distance to proposed onshore HVDC converter/HVAC substation	Description of existing view
	Centrica Power Station	Industrial	137m	Located to the east of the proposed onshore HVDC converter/HVAC substation site this power station is set back from Chase Hill Road. It is surrounded by farmland. Beyond a field to the east, lies the Humber Sea Terminal. To the south lie Fox Covert and the National Grid substation. Beyond the National Grid substation lies the E.ON power station. To the west lies a field with areas of screen planting belonging to Centrica. The proposed onshore HVDC converter/HVAC substation site lies immediately to the west of this field. To the north is open arable farmland. Views towards the proposed site are available from ground level through the maturing areas of planting, and across thin hedgerows bounding the field.
	E.ON Power Station, Chase Hill Road	Industrial	100m	The E.ON power station is accessed directly from Chase Hill Road. Car parks are located to the south of the building. Views west, to the proposed site from the car parks are screened by maturing planting. However, views are available from the first floor windows towards the proposed site. To the north the views are of the National Grid substation and the OHLs. Beyond this lies the Centrica power station. To the east, Fox Covert and Burkinshaw's Covert screen views of the Humber and the sewage works. To the south, lies an industrial area of oil refineries.
	National Grid Substation	Industrial	50m	The National Grid substation is situated between the two power stations, Centrica to the north and E.ON to the south. There are filtered views from the car park area of the switch yards and houses.
	Industry to the south of Chase Hill Road	Industrial	500m	The tanks associated with the oil refineries lie to the south of Chase Hill Road. There are areas of car parking adjacent to the road, but these are well-screened by hedgerows. Views towards the proposed onshore HVDC converter/HVAC substation site are very limited from this location.
	Humber Sea Terminal	Industrial	1.6 km	There are views across to the area of the proposed site from the Humber Sea Terminal facilities. Views are restricted by the Centrica power station and intervening vegetation.
Public Rights of Way				
	Footpath 77	Recreational	400 m	Footpath 77 is one of the longer footpaths in proximity of the proposed site. It runs from the eastern end of Kettlebridge Lane in East Halton, to the north of two small fields. Views to the proposed site along this stretch of the route are limited due to the well-established intact hedgerows. Views directly east are more open as the hedgerows have been removed around the larger (merged) fields. As the footpath crosses another smaller field, the hedgerows become smaller and the views are more open. It runs north of a triangular copse and continues east. This section of footpath 77 crosses a field boundary and runs across a large field, towards the Humber. There are views towards the proposed site across this open arable field.
	Footpath 78	Recreational	78m	This footpath extends east from the end of Swinster Lane, parallel to footpath 77 to the north and footpath 79 to the south. It follows a route along the northern side of three arable fields. The hedgerow does not have a significant number of hedgerow trees and views across the rural landscape are possible. The existing tree belt around the proposed site screens the fields that the onshore HVDC converter/HVAC substation is actually located in. It links to footpath 86 to the north-west of the proposed site.

	Visual receptor / viewpoint location	Receptor type	Distance to proposed onshore HVDC converter/HVAC substation	Description of existing view
	Footpath 79	Recreational	46m	Footpath 79 extends east from Scrub Lane. This footpath is routed along a track, which is bounded by discontinuous hedges either on the southern or the northern side, but not on both sides together. Hedges running at right angles to the track provide some limited screening. As the track reaches the parish boundary, it passes to the north of a triangular area of trees and scrub that appear to be naturalizing. The boundary of the parish is marked by a substantial hedgerow which forms the eastern boundary to the proposed site. This hedgerow allows only limited views south as it follows a straight south-west to north-east course. Footpath 86 links into footpath 79 just to the west of the proposed site. The strong hedgerow and the screening afforded by it is a feature of this section. Adjacent to the proposed site this screening is reinforced by the recent bund planting within the proposed site boundary. Towards the most northerly part of the proposed site the hedgerow has been removed, and where the bund planting stops there are open views into the proposed site from the footpath, particularly if walking in a south-westerly direction.
	Footpath 86	Recreational	0	Footpath 86 extends north-east from Brick Lane, following a track on the northern side of a well-established hedgerow. Several similarly mature hedgerows abut the path on the northern side. The OHLs and towers are situated in the field to the south. The footpath has a direct view of the concentration of OHLs adjacent to the National Grid substation and the Centrica Power station beyond. The stacks and upper sections of the main buildings of the E.ON power station are clearly visible from this footpath, as are the flare stacks at the oil refineries. The footpath turns north-north-west and runs next to a well-vegetated bund, which lies within the proposed site of the proposed onshore HVDC converter/HVAC substation. The maturing vegetation effectively screens views into the proposed site. Towards the northern section of the field, the tree belt is set back from the path, as it continues in a straight line to the parish boundary, at which point it crosses a mature hedgerow and joins Footpath 79.
Recreational Receptors (other than Public Rights of Way) and Tourist Receptors				
	The Black Bull public house, East Halton	Recreational	983m	The Black Bull public house is located on the west side of Townside, within the centre of East Halton. Picnic tables are set out at the front of the pub, adjacent to road. The pub also has a 'beer garden' adjoining the car park. Within and around the garden there is much mature planting. All views towards the proposed onshore HVDC converter/HVAC substation are blocked by two storey houses on the east side of the road. There are occasional channelled views between houses of the stacks at the power stations. Mature trees and hedgerows help soften these views.
	The Amethyst Hotel, East Halton	Recreational	895m	The Amethyst Hotel is situated opposite the entrance to Scrub Lane. Views of the upper sections of the power station's stacks are possible between the roofs of the bungalows that are located on the east side of the road; most other views are limited.
Dynamic Receptors				
	Townside Road, East Halton	Roads	900m	Views towards the proposed site are truncated by vegetation and properties on the eastern side of the road. Where the field runs up to the road, there are more open views of hedgerows and trees of the OHLs and stacks of the power stations. The oil refinery tanks and flare stacks lie to the south. However, much of the lower sections of the industrial elements (tanks and power stations) are barely visible through the hedgerows and trees.

	Visual receptor / viewpoint location	Receptor type	Distance to proposed onshore HVDC converter/HVAC substation	Description of existing view
	Chase Hill Road	Roads	400	This is a busy road servicing the industrial areas to the east adjacent to the Humber. Much new planting has been undertaken to the north of the road, which although still young is forming substantial wooded elements within the landscapes. The mixed evergreen and deciduous copses and tree belts help soften if not screen the OHLs and power stations. To the south, a strong hedgerow screens the bases of the tanks and car parking from view. Adjacent to the E.ON power station and cooling vents there is little planting preventing views from the road. However, this is not negative as the unusual architectural form of the cooling system is a feature, as are the four stacks when seen in this context. The Centrica power station can be seen from the road, situated to the north. Views towards the proposed onshore HVDC converter/HVAC substation are limited at this point. The two areas of woodland, Burkinshaw's Covert and Fox Covert, screen views from the north-eastern end of Chase Hill Road.
	Haven Road	Roads	500m	Views from Haven Road towards the proposed site are restricted by Fox Covert. The views are mainly to the east, over the parked vehicles. Views open up to the west where Haven Road turns north-east. At the northern end of Fox Covert, the 400kV OHLs pass between the woodland and the Centrica Power station, the National Grid substation is visible and views to the area of the onshore HVDC converter/HVAC substation are also available.
	East Field Road	Roads	650m	Views from the East Field Road, as it passes to the west of the oil refineries, are very limited as the tanks screen views in the direction of the proposed site.
Medium Range Receptors (1 km – 5 km)				
Residential Receptors				
	Properties on East Halton Road Properties on Church Road / Nicholson Road	Residential	1.6km	Views from properties closer to the East Halton Road (further west) and those to the south of Church Road / Nicholson Road have very limited views towards the proposed onshore HVDC converter/HVAC substation site. The overhead lines are visible through vegetation, and other properties, as are the flare stacks and chimneys of the oil refineries to the south and east. The properties on the north side of Nicholson Road have less restricted views north-east (towards the proposed site). The stacks of both the E.ON and Centrica power stations are visible above the tanks at the oil refineries. The OHLs to the north are visible. These properties have more open views to the closer elements of the tanks, flare stacks and other infrastructure associated with the oil refineries and other industry at Killingholme.
	Properties in the north of East Halton	Residential	1.25km	From those individual properties on the eastern side of the north part of East Halton, views towards the onshore HVDC converter/HVAC substation are screened by vegetation in the gardens of the larger properties such as Manor Farm. The well-established hedgerows with mature hedgerow trees also provide effective screening in this part of the village.

	Visual receptor / viewpoint location	Receptor type	Distance to proposed onshore HVDC converter/HVAC substation	Description of existing view
	Individual properties on Skitter Road	Residential	1.56km	Red House and East Halton Grange are both located on Skitter Road to the north of East Halton. East Halton Grange has very few glimpsed views between vegetation of the power station stacks and the flare stacks at the oil refineries. Red House has even more restricted oblique views. Although this property is marginally closer to the proposed onshore HVDC converter/HVAC substation site, there is more vegetation on the east side of Skitter Road, which screens most views.
Community Receptors				
	St. Peter's Church, East Halton	Community	950m	The entrance to the Church of St. Denys in North Killingholme is on the south-facing side of the church, and does not have views towards the proposed onshore HVDC converter/HVAC substation site. Vegetation in and around the village screens most views in this direction. The tops of the stacks at the E.ON power station would be visible from the church tower above the buildings of Church Farm. Views from ground level are screened by the same buildings.
	Methodist Church, East Halton	Community	1.1km	The Methodist Church, East Halton, is located opposite the junction of Lease Lane and Townside. The views towards the proposed onshore HVDC converter/HVAC substation are screened by vegetation and properties on the lane.
Industrial and Commercial Receptors				
	Industrial areas of Killingholme and North Killingholme Airfield	Industrial	2.5 km	Within a 5km radius of the onshore HVDC converter/HVAC substation there are many different commercial and industrial receptors, including the Killingholme oil refineries as well as the industrial areas at the redundant North Killingholme Airfield. All have very limited views towards the proposed onshore HVDC converter/HVAC substation location.
Public Rights of Way				
	East Halton Village Green	Recreational	1.05 km	The village green is located at the junction of Townside, College Road and Kettlebridge Lane. It is a well-kept grassed area with benches and a noticeboard. Surrounded to the north and west by maturing trees, open to the south and east (the boundaries with the roads). Views towards the proposed onshore HVDC converter/HVAC substation site are screened by buildings and vegetation.
	Footpath 74	Recreational	985m	Footpath 74 that extends east from Station Road, at the north of East Halton, has clear, southerly views to both the power stations and beyond them to the flare stacks of the oil refineries.
	Footpath along the sea defences	Recreational	1.5km	The unofficial Lincolnshire Coast Walk is a route using a series of public footpaths along the coast. Part of the walk passes along the sea defences close to the Humber Haven and the old brick works at the end of Marsh Lane.
Recreational Receptors (other than Public Rights of Way) and Tourist Receptors				
	Marsh Lane Fishing Ponds	Recreational	2.5km	At the end of Marsh Lane is a series of ponds used for coarse fishing on the proposed site of an old brickworks. The views from the location towards the proposed site of the onshore HVDC converter/HVAC substation are filtered through vegetation.

	Visual receptor / viewpoint location	Receptor type	Distance to proposed onshore HVDC converter/HVAC substation	Description of existing view
	Thornton Abbey	Recreational	3.1km	The remains of Thornton Abbey lies to the west of the proposed site. Maintained by English Heritage it is open to the public. Views from the remaining buildings are restricted by surrounding vegetation. However, there are views east from the end building and the Abbey grounds. The views are of an arable landscape sub-divided by hedgerow trees. In the distance the stacks of the E.ON and Centrica power stations are visible, but look almost like some of the poplars and other tall thin trees closer to the Abbey.
	Passengers on ferries	Recreational	2 km	Receptors on passenger ferries using the Humber will have views towards the proposed onshore HVDC converter/HVAC substation, seen between the existing industrial developments.
Dynamic Receptors				
	College Road and Crook Mill Road	Road	890m	College Road and Crook Mill Road both have long views towards the power station and other industry at Killingholme. However, these are distant views and glimpsed through intervening vegetation and built form.
	Marsh Lane	Road	2.7km	Marsh Lane, runs east from Skitter Road to the north of the dismantled railway (north of East Halton). Views south towards the proposed onshore HVDC converter/HVAC substation site are across open arable fields, but the vegetation adjacent to the dismantled railway provides some screening. However the stacks of the power station are visible above this. As the railway turns south, further away from the lane, the screening effect of the vegetation is less apparent, with more open views to the south prevalent.
	Marine vessels	Marine vessels	1 to 5 km	Those marine vessels using the Humber and docking at Humber Sea Terminal have views inland to the power stations and other industry. The proposed onshore HVDC converter/HVAC substation site is partly screened by elements from these receptors.
Long Range Receptors (over 5 km)				
Residential Receptors				
Due to the distance from the site, these receptors have not been covered in this annex.				
Community Receptors				
Due to the distance from the site, these receptors have not been covered in this annex.				
Industrial and Commercial Receptors				
Due to the distance from the site, these receptors have not been covered in this annex.				
Public Rights of Way				
	Public Rights of Way within East Riding of Yorkshire	Recreational	6 km	Views of the proposed onshore HVDC converter/HVAC substation site, from the East Riding of Yorkshire, are distant and seen in the context of the industry on the banks of the Humber. Photograph 29, Figures 5.36 illustrates the general views from the East Riding. Photograph 30, Figure 5.37 illustrates the views from a Public Right of Way at Stone Creek, directly east of the proposed onshore HVDC converter/HVAC substation. Photograph 29 is from a Public Right of Way at Paull, north-north-east of the proposed site.

	Visual receptor / viewpoint location	Receptor type	Distance to proposed onshore HVDC converter/HVAC substation	Description of existing view
	Trans Pennine Way Sustrans Cycle Route 66	Recreational	11 km 12 km	Within the 15 km radius of the proposed onshore HVDC converter station site lie several promoted footpaths and cycle routes (see Figure 5.6). Those closest to the onshore HVDC converter/HVAC substation are the Trans Pennine Way and Sustrans Cycle Route 66 in the East Riding of Yorkshire) Due to the distance from the proposed site the proposed onshore HVDC converter/HVAC substation site, is barely discernible from these routes.
	Sustrans Cycle Route 1 Viking Way (European Long Distance Route E2)	Recreational	10 km 11 km	In Lincolnshire, Sustrans Cycleway Route 1 lies approximately 9.3 km to the west of the proposed site, while the Viking Way (also European Long Distance Route E2 at this point) lies 11.8 km to the west of the proposed site at its closest point. Both of these routes have potentially intermittent views towards the proposed site. However, due to the distance from the proposed site and the generally flat landscape, the views are very restricted.
Recreational Receptors (other than public Rights of Way) and Tourist Receptors				
	Parks within Kingston-upon-Hull	Recreational	12 km	Pearson Park and East Park in Kingston-upon-Hull do not have views of the proposed onshore HVDC converter/HVAC substation site. This is due to the surrounding buildings and vegetation.
	Brocklesby Park	Recreational	6.5 km	Brocklesby Park has very limited public views towards Killingholme, Photograph 37, Figure 5.44 illustrates one of the most unrestricted views. Closer to the proposed site the land becomes flatter and fewer views are available.
	Lincolnshire Wolds AONB	Recreational	15 km	The Lincolnshire Wolds lies to the south-south-east of the proposed site. Views from within the 15 km study area are limited due to intervening vegetation and distance. Photograph 28, Figure 5.30 illustrates the views from this direction.
Dynamic Receptors				
	A180	Road	5 km	Although the A180 has theoretical views of the proposed site, only glimpses of the flare stacks of the oil refineries are visible. From the A180 overbridge there are distant views of the stacks on the E.ON power station. Lower elements are screened by vegetation.
	Marine vessels	Marine vessels	5 to 15 km	Vessels using the Humber ports have distant views towards the proposed onshore HVDC converter/HVAC substation site, within the context of the industrial areas at Killingholme.
	Railways	Rail	5 to 15 km	Rail users travelling from Barton-upon-Humber have potential views towards the proposed onshore HVDC converter/HVAC substation site; however, these would be intermittent and fleeting.