
Longfield Solar Farm Final Local Impact Report

August 2022

Chelmsford City Council Response

1. Introduction and terms of reference

Introduction

- 1.1 This report comprises Chelmsford City Council's Local Impact Report (LIR) to the Longfield Solar Farm. The report has been prepared in accordance with the advice and requirements set out in the Planning Act 2008 (as amended) and Advice Note One (Local Impact Reports (Version 2)) issued by the Infrastructure Planning Commission in April 2012.
- 1.2 The Advice note states that the LIR is a report in writing giving details of the likely impact of the proposed development on the authority's area. The LIR should centre around whether the Local Authority considers the development would have a positive, negative or neutral effect on the area.

Scope

- 1.3 The proposed site is located within the administrative areas of Chelmsford and Braintree, and Essex County Council. The site is located on farmland north-east of Chelmsford, and north of the A12 between Boreham, Hatfield Peverel, Great Leighs and Terling.
- 1.4 The proposal is for the construction, operation and maintenance, and decommissioning of a new solar farm with co-located Battery Energy Storage System (BESS) and export connection to the national electricity transmission network (NETS), including extension of the existing Bulls Lodge Substation.
- 1.5 It would be sited on 453 ha of land located north-east of Chelmsford. The proposal put forward by the applicant; Longfield Solar Energy Farm, a joint venture between EDF – Renewables and Padero Solar, includes:
 - A ground mounted solar photovoltaic generating station
 - Battery Energy Storage System (BESS) compounds
 - On site substation compound (Longfield substation)
 - Works to lay high voltage electrical cables including works to lay one 400KV cable circuit and associated infrastructure and temporary construction laydown areas
 - An extension to the Bulls Lodge Substation comprising an electricity switching station including access and temporary overhead line alterations

- Other works including and not limited to cables, boundary treatment, CCTV, lighting, landscaping, biodiversity enhancement, tracks, earthworks, surface water management, temporary construction compounds, temporary footpath diversions, and diversion of cables
- Temporary construction laydown areas for Solar Farm Site
- Office, warehousing and plant storage building,
- Works to facilitate access, including road widening of highways to facilitate access to the Order limits
- Access for habitat management.

1.6 The land within the Order limits comprises four distinct areas:

- **The Solar Farm Site** – which mainly comprises agricultural land.
- **Bulls Lodge Substation Site** - located to the south-west of the Solar Farm Site and comprises the Bulls Lodge substation, and neighbouring agricultural fields.
- **Grid Connection Route** – the land between the Solar Farm Site and the Bulls Lodge Substation Site.
- **Site Access Works** – the land needed to access the Solar Farm Site and Bulls Lodge Substation from the public highway.

1.7 As the proposal is located across multiple host authorities, the three authorities of Chelmsford City Council (CCC), Braintree District Council (BDC) and Essex County Council (ECC) have continued to work collaboratively and where necessary shared expertise in assessing the proposal.

1.8 The LIR relates to the impacts of the proposed development as it affects the administrative area of Chelmsford City Council. Separate, but complimentary LIR's have been produced by Braintree District Council and Essex County Council on the impacts of the proposed development as it affects their respective administrative areas.

Purpose and Structure of Report

1.9 The Local Impact Report's primary purpose is to identify the policies in the Local Plan in so far as they are relevant to the proposed development and the extent to which the development accords with those policies. It does this under topic based headings. The key issues are identified, following by commentary on the extent to which the applicant addresses those issues. Finally, the adequacy of the application/ Development Consent Order is considered, together with commentary regarding the use of requirements (conditions).

1.10 The LIR gives a brief overview of the description of the site and surroundings and a general review of the details of the proposal to highlight particular features. However, the applicants Environmental Statement (ES) provides sufficient description and details of the proposal.

1.11 This LIR covers areas where Chelmsford City Council as a statutory function or holds particular expertise. CCC defers to Braintree District Council and Essex County Council on all other matters, as set out in this Local Impact Report.

1.12 The LIR has not sought to duplicate material covered in the Statement of Common Ground (SoCG), however, there may be some matters, for example, 'requirements' where there is overlap.

2. Description of site and surroundings

Order limits

2.1 A full description of the site and surroundings is given in the applicant's Environmental Statement (ES). The land falls within the administrative areas of Braintree District Council Chelmsford City Council and Essex County Council.

2.2 The site is located on farmland north-east of Chelmsford and north of the A12 between Boreham, Hatfield Peverel, Great Leighs and Terling. The farmland is mainly under arable production (mainly Grades 3a to 3b), and spans a broadly largely flat, plateaued landscape interspersed with trees, hedgerows, tree belts and small blocks of woodland. The hedgerows and woodland range between lengths of dense tall vegetation and thin lines of vegetation with sporadic trees present. Within the site are some small areas of pasture interspersed with individual trees, hedgerows, small woodland blocks and farm access tracks.

2.3 The northern part of the site consists of undulating and elevated landform comprising part of the River Ter Valley, which rises from the base of the valley to the northward edge of the Order limits.

2.4 Most of the central and southern parts of the Order limits are located across flat and low-lying land between Waltham Road, Boreham Road and Terling Road.

2.5 Public Rights of Way (PRoW), including the Essex Way, cross the site and surrounding area. Other existing infrastructure includes a network of 400 kV, 132 kV and 11kV pylons and overhead powerlines (OHLs) supported by towers and wooden poles. These extend from the south-west of the Order limits to the north west of Boreham and to the west of Sandy Wood, where there is a diversion to Fuller Street.

2.6 Boreham Road and Waltham Road run north-south along the western edge of the Order limits, with the A12 carriageway, B1137 and railway line connecting Chelmsford and Witham running to the south and south-west of the Order limits.

2.7 Terling Road and Terling Hall Road border the site to the east, serving the settlements of Fuller Street and Terling. Noakes Farm Road crosses the Order limits connecting Boreham Road in the west with Terling Hall Road in the east.

2.8 The existing Bulls Lodge 400kV National Grid Electricity Transmission (NGET) substation lies within the south-west part of the Order limits to the west of Brick House Farm and about 400 metres to the north of the A12 carriageway.

Surrounding Area and allocations

- 2.9 A number of settlements lie within the vicinity of the Order limits. Boreham and Chelmsford within Chelmsford District and Fuller Street, Gambles Green, Terling and Hatfield Peverel within Braintree District.
- 2.10 To the west of the Order limits, the land has been used for sand and gravel extraction. Boreham Airfield lies about 800 metres to the west of the limits. The River Chelmer flows about 2.5km to the south of the Order limits, with several large lakes and reservoirs adjacent to the river, which extend close to Waltham Road.
- 2.11 Bulls Lodge sand and gravel quarry lies directly to the north of the existing Bulls Lodge Substation. Directly to the south of the substation is Brick House Farm access track and the A12.
- 2.12 A number of residential properties, comprising individual houses, lie on or close to the boundary of the Order limits.
- 2.13 The majority of the site is located within Flood Zone 1 with a very small section of the site forming part of the Grid Connection Route within Flood zones 2 and 3. The Grid Connection Route would cross the southern end of Boreham Road Local Wildlife Site (LoWS).
- 2.14 There are no designated heritage assets within the Order limits, although several listed buildings are located close to the Order edges. Three Scheduled Ancient Monuments are within 3km of the Order limits and there are four Registered Parks and Gardens. Terling Conservation Area lies about 650 metres to the south-east and Boreham Conservation Area about 750 metres to the south. A network of Green Lanes extends across the Order limits and the surrounding area. In addition, some trafficked lanes within the Order limits are protected under Chelmsford City Council and Braintree District Council policies.
- 2.15 There are no ancient woodlands or trees protected by Tree Preservation Order (TPO's) within the Order limits, although several ancient woodlands are located next to the Order limits. One ancient woodland; Toppinghoe Hall Wood and Porters Wood, is encircled by the Order. No development is proposed within 15 metres of ancient woodland.
- 2.16 The Order limits include a Minerals Safeguarding Area (MSA), Minerals Consultation Area (MCA) and Waste Consultation Area (WCA).
- 2.17 Whilst mainly located within the Braintree District administrative area, the western parts of the site, including some of the land used for the siting of the solar arrays, Bulls Lodge Substation site, Grid Connection Route and primary access route (from Wheelers Hill), fall within the City Council area. The proposed site allows space for landscaping, habitat enhancement and mitigation.
- 2.18 Land to the west of the Solar Farm site is allocated in the Chelmsford Local Plan for North East Chelmsford urban extension to form a new Garden Community. The site will create a community of around 10,000 new homes and would include employment opportunities, community facilities and a new country park.

- 2.19 Highway improvements within the locality that are due to be completed prior to construction include the Boreham Interchange Improvements, the Radial Distributor Road (RDR) and phase 1 of the Chelmsford North-East Bypass (CNEB).
- 2.20 Highway schemes expected to be completed after or during the construction phase include the A12 Chelmsford to A120 Widening Scheme, CNEB Phase 2 and the Outer Radial Distributor Road (RDR2).
- 2.21 Locally the site falls within the Rural Area beyond the Green Belt.

3. Details of the proposal

- 3.1 A full consideration of the details of the proposal is set out in the applicants Planning Statement.
- 3.2 It is noted that the applicant is using the 'Rochdale Envelope' approach to provide flexibility in the development.
- 3.3 The proposal is for the construction, operation and maintenance, and decommissioning of a new solar farm with co-located Battery Energy Storage System (BESS) and export connection to the national electricity transmission network (NETS), including extension of the existing Bulls Lodge Substation.
- 3.4 It would be sited on 453 ha of land located north-east of Chelmsford. The proposal put forward by the applicant; Longfield Solar Energy Farm Limited, is a joint venture between EDF – Renewables and Padero Solar, and includes:
- A ground mounted solar photovoltaic generating station
 - Battery Energy Storage System (BESS) compounds
 - On site substation compound (Longfield substation)
 - Works to lay high voltage electrical cables including works to lay one 400KV cable circuit and associated infrastructure and temporary construction laydown areas
 - An extension to the Bulls Lodge Substation comprising an electricity switching station including access and temporary overhead line alterations
 - Other works including and not limited to cables, boundary treatment, CCTV, lighting, landscaping, biodiversity enhancement, tracks, earthworks, surface water management, temporary construction compounds, temporary footpath diversions, and diversion of cables
 - Temporary construction laydown areas for Solar Farm Site
 - Office, warehousing and plant storage building,
 - Works to facilitate access, including road widening of highways to facilitate access to the Order limits
 - Access for habitat management.
- 3.5 The site would comprise four areas of development:

The Solar Farm site – including Longfield Substation, Battery Storage and ancillary works

- 3.6 The solar farm site would comprise the installation of photovoltaic panels laid out in a framework of rows running from east to west across the Order limits. They would be fixed to a framework that would be primarily driven or piled into the ground and linked to solar stations (comprising inverter, transformer and switchgear) along underground cables, to a depth of about 1 metre. The structures would have a maximum height of about 3 metres above ground level and a separation distance of between 2.0 – 4.0 metres apart.
- 3.7 Associated infrastructure (plant) would comprise Balance of Solar System (BoSS) comprising inverters, transformers and switchgears necessary to manage the electricity generated by the PV panels. Some of these would be housed within Solar Stations, where plant is housed together in pre-configured units measuring about 12.5 metres by 3.1 metres in plan and 3.5 metres in height. A maximum of 150 solar stations are shown within the design principles.

Longfield Substation and battery storage

- 3.8 Within the Solar Farm Site, underground cables would link from the Solar Farm Site to the Longfield Substation which would be located within a fenced compound of about 1.7ha, 20 metres to the north of Toppinghoehall Wood. The substation would convert electricity generated, imported and stored by the scheme to 400kV for onward transmission to the National Grid along the Grid Connection Cables and Bulls Lodge substation extension.
- 3.9 The substation compound would contain plant, typical to that found within the BoSS, as well as a control building housing office, storage and welfare facilities, monitoring and control systems, a 400 kilovolt filer compound and electrical cables. The maximum height of the compound would be 13 metres high. The control room and office would have a footprint of up to 27 metres by 14 metres and a height of about 7 metres.
- 3.10 Next to the substation, The Battery Energy Storage System (BESS) of the proposal would allow electricity to be stored at times of an excess or shortfall in demand, and then released to the National Grid when it is needed or by removing surplus power from the grid and storing it to be released later.
- 3.11 The BESS compound would be located in two fenced compounds sited either side of the Longfield substation, north of Toppinghoehall Wood. It would be constructed in two separate phases, one during the construction of the wider scheme, the other five years after commencement.
- 3.12 The BESS would comprise batteries and associated equipment housed within individual enclosures known as units. They would be supported by plant and electrical infrastructure used for operating the system, including monitoring and control systems, and heating, ventilation and air conditioning systems. These would all be system housed within containers and enclosures to a maximum height of four metres. Fire safety infrastructure including water storage tanks and a shut of valve for containment of fire water and hardstanding to accommodate emergency vehicles would be provided. Sound attenuation in the form of an acoustic fence may be required.

Other ancillary works

3.13 Ancillary works would comprise, but is not limited to the following:

- Fencing, mainly stock proof, would be installed around the perimeter of the Solar Farm Site. Fencing in the form of palisade would surround the Longfield substation, Battery Storage Area and Bulls Lodge substation.
- Security management systems including CCTV columns, lighting columns and lighting, cameras, water stations, communications infrastructure and perimeter fencing.
- Landscaping, biodiversity mitigation and enhancement measures including planting, earthworks and SUDs ponds.
- Means of access, internal access tracks, footpaths, permissive paths, cycle routes and roads including the laying and construction of drainage and irrigation systems.
- Works to divert the existing electric overhead lines.
- Highways works would include the laying down of access tracks.

Grid Connection Route

3.14 Energy would be transferred from the Solar Farm Site and battery storage along the Grid Connection Route to the existing Bulls Lodge Substation site which will need to be expanded. The Grid Connection Route would comprise a single 400KV cable circuit consisting of three cables running underground from Longfield substation north of Toppinghoehall Wood to Bulls Lodge Substation, about 1.9 km to the south-west. No Overhead lines (OHLs) are required within the proposal.

3.15 The construction access area for the Grid Connection Route would be accessed from Generals Lane and Waltham Road. There would be a single crossing point of Waltham Road, just to the north of Chantry Lane to allow access to the cable route between the central crossing of Boreham Brook and Waltham Road.

Bulls Lodge Substation

3.16 The existing Bulls Lodge Substation is operated and managed by National Grid. It comprises an open 400KV air-insulated substation that is designed to supply the National Grid and power the Anglian railway line.

3.17 The proposal would extend the existing substation to provide a new electric connection point to the National Grid to facilitate the import and export of electricity to and from the Solar Farm Site. It would comprise the installation of a new main substation building with switchgears, associated plant rooms, amenities block, storage and workshop units, an outdoor air insulated switchgear, temporary overhead line alterations including two temporary pylons and realignment of the existing 400KV overhead line.

3.18 Other works comprise the creation of a new permanent access road including new bell mouth entrance, internal roadways and footpaths, parking, lighting, permanent fencing and

drainage outdoor. The new access would be located to the northern side of the existing private road, about 180km to the west of the existing substation access.

- 3.19 Following completion of the Radial Distributor Road which links Essex Regiment Way (A130) to Junction 19 of the A12 and scheduled for completion in May 2023 , the substation would be accessed from the Boreham interchange (Junction 19).

Site Access Works

- 3.20 Two access roads are included within the Order limits. These are Wheelers Hill and Cranham Road to the west of the Solar Farm Site and Generals Lane to the south of the Bulls Lodge Substation Site. Internal access tracks would be formed throughout the site. Minor widening works are proposed along Wheelers Hill, Cranham Road and Waltham Road within the existing highway boundary.

Construction, operation and management

- 3.21 It is proposed to use Waltham Road/Boreham Road and A130 Essex Regiment Way via Wheelers Hill, Cranham Road and Boreham Road for access to and from the site in the construction, operation and decommissioning stages. Generals Lane would be used for access to the Bulls Lodge Substation site.
- 3.22 A construction compound would be formed off the Wheelers Road access, set on a concrete base comprising crushed hardcore.
- 3.23 The proposal anticipates that the total construction period would take approximately 24 months to complete. With the exception of the Battery Storage System (BESS), it is expected that the scheme would be built in a single phase. The BESS would be built in two phases, the first during the construction of the main scheme, with phase two to follow after an estimated 5 years after completion.
- 3.24 At the peak of construction, it is estimated that up to 600 workers would be required. Working hours on site would run from 7 am until 7 pm Monday to Saturday.
- 3.25 Whilst operational, activity across the site would be minimal and restricted to monitoring, maintenance and the management of the site. The Solar farms would have an operational lifespan of 40 years and the DCO would be valid for this duration. It is anticipated that about 8 permanent staff would be on site with parking for up to 9 vehicles.
- 3.26 The Bulls Lodge Substation would be maintained and managed by National Grid.
- 3.27 During operation, no part of the proposal would be continuously lit. Manually operated and motion detection lighting would be utilised for operation and security purposes around electrical infrastructure and within the BESS compound, Longfield Substation and Bulls Lodge Substation Extension.

- 3.28 The Decommissioning Strategy states that decommissioning is expected to take between 12 and 24 months according to a phased programme managed through a Decommissioning Environment Management Plan (DEMP) and Decommissioning Traffic Management Plan.
- 3.29 The land within the Solar Farm Site would be returned to the landowner and its original use after decommissioning. The infrastructure, comprising all solar PV array infrastructure including modules, mounting structures, cabling, inverters and transformers, would be removed once it reaches the end of its lifespan.
- 3.30 Foundations and other below ground infrastructure, which are not practicable to remove, would be cut to 1 metre below the surface to enable any future ploughing. Piles would be removed.
- 3.31 The works and extension to Bulls Lodge Substation would remain under the National Grid control and the buried cables would be left in situ.
- 3.32 Some primary access accesses would be retained by the landowner, although some permissive paths may be removed. The Decommissioning Strategy assumes that established habitats, such as hedgerows and woodland would be retained.
- 3.33 To restore the land to its pre-condition construction, the soil resource would be managed throughout construction, preparation and decisioning through an Outline Soil Resource Management Plan.

4. Planning History

- 4.1 A full consideration of the planning history is set out in the applicants Environmental Statement (ES).
- 4.2 As a largely agricultural site, much of the planning history within the Order limits is limited and associated with the mineral workings close to the Bulls Lodge Substation site and Grid Connection Route.
- 4.3 A scoping opinion was adopted by the Secretary of State on 16th December 2020.

Bulls Lodge Substation

4.4 The Bulls Lodge Substation site benefits from the following planning history:

- 15/01581/FUL Construction of a new 400kV gas-insulated substation to supply additional power to the Anglia railway. Access track to be upgraded with temporary access to be provided during the construction period. Approved 7th January 2016.

4.5 Not implemented and superceded by the following application:

- 16/00911/FUL Construction of a new 400kV air-insulated substation to supply additional power to the Anglia railway. New car park, fencing and landscaping. Access track to be

upgraded with temporary access to be provided during the construction period. Approved 20th September 2016.

Bulls Lodge Quarry

4.6 Bulls Lodge Quarry lies to the north of Bulls Lodge substation and is operated by Hanson Aggregates under planning permissions CHL/1019/87 and CHL/1890/87 for the winning and working of sand and gravel. Planning applications ESS/147/20/CHL and ESS/148/20/CHL have been submitted to vary conditions to the existing planning permission, with land at Brick Farm proposed to be the last area worked, with works proposed between 2035 and 2039.

5. Relevant planning policy

National Planning policy

- 5.1 The overarching National Policy Statement for Energy (NPS EN-1) and National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) set out national policy for the delivery of nationally significant energy infrastructure, including renewable energy; although neither explicitly covers solar powered electricity generation or battery storage. These Statements set out assessment principles for judging impacts of energy projects and are material considerations when considering development proposals.
- 5.2 The Government is reviewing and updating the Energy NPS EN-1 and published a suite of documents for consultation on 6th September 2021. The emerging draft update to NPS EN-3 would bring solar Nationally Significant Infrastructure Project (NSIP) developments into the coverage of the National Policy Statements (NPS's). This draft statement proposes specific policies for solar photovoltaic generation and states at paragraph 2.47.1 that such is a key part of the Government's strategy for low-cost decarbonisation of the energy sector.
- 5.3 It states that factors that will influence site selection by the application include irradiance and site topography, proximity of site to dwellings capacity of a site, grid connection, agricultural land classification and land type and accessibility (section 2.48 refers).
- 5.4 At section 2.49 it proposes that technical considerations for the Secretary of State are access tracks, site layout, design and appearance, security and lighting, project lifetimes, and flexibility. At sections 2.50 – 2.54, the draft NPS advises that consideration should be given to biodiversity and nature conservation, landscape, visual and residential amenity, glint and glare, cultural heritage, construction including traffic and transport noise and vibration
- 5.5 The Environment Act 2021 contains legislation to protect and enhance the UK's Environment for future generations and contains a series of principles to guide future policy making to protect the environment. It contains legally binding environmental targets that will be enforced by law through a new independent Office for Environmental Protection (OEP).

5.6 The National Planning Policy Framework (NPPF) states that planning plays a key role in helping shape places to secure radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change, and supporting the delivery of renewable and low carbon energy and associated infrastructure.

5.7 The National Planning Policy Guidance (NPPG) outlines guidance on the specific planning considerations that relate to large scale ground-mounted solar PV farms. It states that one consideration amongst others should be whether land is being used effectively; recommending that large scale solar farms are focused on previously developed and non-agricultural land.

Local Planning Policy

5.8 The adopted Chelmsford Local Plan 2020 and Making Places Supplementary Planning Document (SPD) set the key principles for development within Chelmsford. There are several local planning policies that are relevant to the consideration of the proposal. These are Strategic Policy S2 and Development Management Policy DM19.

5.9 Strategic Policy S2 - Addressing climate change and flood risk, sets out the Councils strategic policy requirements for mitigating and adapting to climate change. In addressing the move to a lower carbon future for Chelmsford. It states that the Council will, amongst other considerations, encourage new development that provides opportunities for renewable and low carbon energy technologies and schemes and provides opportunities for green infrastructure including city greening, and new habitat creation.

5.10 Policy DM19 - Renewable and low carbon energy sets out the criterion that renewable and low carbon planning application proposals will be considered against.

- i. Do not cause demonstrable harm to residential living environment; and
- ii. Avoid or minimise impacts on historic environment; and
- iii. Can demonstrate no adverse effect on the natural environment including designated sites; and
- iv. Do not have an unacceptable visual impact which would be harmful to the character of the area; and
- v. Will not have a detrimental impact upon highway safety.

5.11 Several other local plan policies are relevant to the consideration of proposals including:

- Strategic Policy S3 - Conserving and enhancing the historic environment,
- Strategic Policy S4 - Conserving and enhancing the natural environment,
- Strategic Policy S7 – The spatial strategy,
- Strategic Policy S11 - The role of the countryside,
- Policy DM8 - New buildings and structures in the rural area,
- Policy DM10 - Change of use (Land and buildings) and Engineering operations.
- Policy DM13 - Designated heritage assets,
- Policy DM14 - Non designated heritage assets,
- Policy DM15 - Archaeology,
- Policy DM16 - Ecology and biodiversity,

- Policy DM17 - Trees, Woodland and landscape features,
- Policy DM18 - Flooding / SUDs
- Policy DM23 - High quality and inclusive design,
- Policy DM27 - Parking standards,
- Policy DM29 - Protecting living and working conditions,
- Policy DM30 - Contamination and pollution.

5.12 The Council adopted its Solar Farm Development Supplementary Planning Document (Solar Farm SPD) on 16th November 2021. The Solar Farm SPD contains local guidance on preparing and submitting proposals for solar farms. It also gives guidance on how planning applications should be considered in light of national and local requirements

5.13 Other relevant adopted local planning policies and guidance include:

- Chelmsford Local Plan 2013-2036, May 2020
- Essex County Council and Southend-on-Sea Waste Local Plan, 2017
- Essex County Council Minerals Local Plan, July 2014
- Chelmsford Surface Water Management Plan (SWMP) 2018
- Chelmsford City Strategic Flood Risk Assessment (SFRA) 2019
- Made Neighbourhood Plans
- Emerging Making Places Supplementary Planning Document (SPD)
- Emerging Planning Obligations SPD

5.14 The Council is about to review its local plan to consider National Policy and ensure its stays up to date. The reviewed Local Plan will run from 2022- 2041. The Local Plan Review is not yet material to the consideration of Longfield Solar Farm, but further information will be provided on the status of the document during the examination period.

6. Principle of development and likely significant effects

Introduction

6.1 On 16th July 2019, Chelmsford City Council (CCC) declared a Climate and Ecological emergency. The declaration represented a commitment to take appropriate action to make the Council's activities net-zero carbon by 2030.

6.2 CCC recognises that solar energy development can help meet targets for reducing carbon emissions, reduce reliance on fossil fuels and provide local energy security. They can also provide economic diversification for farmers and landowners and support local employment opportunities.

6.3 The proposed development would provide a positive impact in terms of contributing towards a reduction in carbon emissions. However, the positive impact in reducing carbon emissions must be balanced against the environmental impacts of the proposal as considered below.

6.4 CCC supports the development of solar energy development in principle provided that there are no significant adverse environmental impacts that cannot be appropriately managed and/or mitigated through the Development Consent Order (DCO) process.

6.5 The following are identified as main issues / key areas of concern.

- Landscape character and visual amenity
- Natural environment and loss of agricultural land
- Historic Environment
- Residential living environment
- Noise, Vibration, Air Quality, and contamination
- Traffic and Highway Safety
- Flooding and Drainage
- Socio economic and other matters

Landscape character and visual amenity

Chelmsford Local Plan

6.6 Policy DM19 of the Chelmsford Local Plan applies. This states that planning permission will be granted for renewable or low carbon energy developments provided they iii) can demonstrate no adverse effect on the natural environment including designated sites and iv) do not have an unacceptable visual impact which would be harmful to the character of the area.

6.7 Policies S4 – Conserving and Enhancing the Natural Environment, S11- The role of the countryside, DM8 – New buildings and structures within the rural area, DM11- Change of use (land and buildings) and Engineering operations and DM23 – High quality and inclusive design of the Chelmsford Local Plan are also relevant, as is the adopted Solar Farm SPD.

Key Local Issue

6.8 Chelmsford City Council's main concern is that the development does not have an unacceptable visual impact and would not harmfully affect the character and appearance of the area.

Consideration

6.9 The site is currently in agricultural use and has a well vegetated character. Trees and hedgerows border the site boundaries and would mainly be retained.

6.10 The solar farm would mainly cover the agricultural fields which make up the rolling landscape of the Terling and Boreham Farmland Plateau. The northern part of the site consists of undulating and relatively elevated landform that rises relatively steeply northwards from the River Ter and Terling Spring. The central area of the site comprises a plateau between the valley of the River Ter to the north and east and the valley of the River Chelmer to the south and west.

The land to the south of the site, close to the River Chelmer and the location of Bulls Lodge Substation, has a flat and low-lying landform within which are several large lakes and reservoirs.

- 6.11 The development would be located across a series of agricultural fields with a gently sloping gradient. Whilst the agricultural character results in an open character to the fields, there are many mature woodlands and extensive tracts of vegetation. The fields within the site are delineated and divided by existing tree belts, woodland and hedgerows.
- 6.12 There are several ancient woodlands bordering the Order limits including Sandy Wood north of the Order limits, Scarlets Wood and Ringers Wood in the centre (but excluded from the Order limits) and Toppinghoehall Wood and Porters Wood bordering the southern boundary of the Order limits.
- 6.13 The site is located within the South Suffolk and North Essex Clayland National character area. Locally, the Braintree, Brentwood, Chelmsford, Maldon, and Uttlesford Landscape Character Assessment (CBA 2006) locates it within LCA B17 Terling Farmland Plateau.
- 6.14 Key characteristics of the land include:
- Rolling arable farmland
 - Irregular pattern of medium to large scale fields
 - Scattered settlement pattern with frequent small hamlets, typically with greens and ponds.
 - Network of narrow winding lanes
 - Mostly tranquil away from the A12 and A131
- 6.15 The proposal would lead to a significant change in the character and appearance of the landscape, which could be argued to lead to a change in the quality of the landscape and loss of agricultural character. However, green energy equipment such as solar arrays and wind turbines are rapidly becoming features that are becoming an integrated part of the agricultural landscape.
- 6.16 The proposal would retain the original field pattern in situ. Within the site, the panels would be sat on the flat land within east-westerly arrays (rows).
- 6.17 The applicant has provided a Landscape and Visual Impact Assessment (LVIA). This document describes the baseline qualities and current condition of local landscape character. It identifies several locations (visual receptor viewpoints) from which the site can be viewed.
- 6.18 The LVIA also identifies steps that would be taken to mitigate against any harm that would likely to arise from the implementation of the development.
- 6.19 The LVIA has been reviewed by the Councils external landscaping consultants, Wynne Williams Associates (WWA). WWA have been appointed to act for all three host authorities in respect of landscaping matters.
- 6.20 WWA were appointed at pre-application stage to review and advise upon the landscape implications of the proposal. Their assessment is appended at Appendix one. For completeness,

the assessment relates to the entire site, rather than splitting along the Chelmsford/Braintree boundary.

Methodology

- 6.21 WWA confirm that the landscape character and visual impact assessment has been carried out using the methodology set out in the Guidelines for Landscape and Visual Impact Assessment (3rd Edition) which is the current commonly applied professional guidance.
- 6.22 They state that the definition and the extent of the local landscape character has been agreed to give a fine-grained approach to the LVIA.
- 6.23 They note there is one area of disagreement which is with reference to the character impact on the Ter Valley (see paragraph 6.67 and 6.68 below).
- 6.24 WWA confirm that following a review of the proposal at pre-application stage, and subsequent adjustments made to the extent of the solar arrays, there is no requirement to undertake a residential amenity assessment.
- 6.25 WWA confirm that a cumulative assessment has been undertaken using current methodology, although this is less defined than standard LVIA methodology and that the worse case scenario (known as the 'Rochdale Envelope') have been applied to the assessment.
- 6.26 From the point of view of landscape and visual assessment, there are two aspects of the proposal that have potential to cause an effect on visual amenity and landscape character. These are the activities and elements of the proposal that would affect the fabric of the site landscape, and the activities and visual characteristics of the elements that would be visible from the surrounding locality.
- 6.27 The nature of solar farm developments is that these activities and elements would occur in three distinct phases, a short-term construction phase, a long-term operational phase, and a short-term decommissioning phase.

Visual amenity

- 6.28 The proposal has been supported by Zone of Theoretical Visibility (ZTV) mapping which extended to an initial area of 4km from the Order limits in all directions. The study area was then reduced to 2km to the north, east and west and 4km to the south. As part of establishing a baseline, and in addition to defining landscape character types at national, regional and district scale, a total of 13 local level landscape character areas were defined within the site to provide a finer level of landscape detail.
- 6.29 In addition, the effect of the development from 57 viewpoints has been considered. The viewpoints were selected to represent the most open views of the solar farm from a range of distances, directions and viewpoint receptor locations.
- 6.30 The harm caused from the visual effects of the development has been assessed to range from major/moderate adverse in year 1 of operation. By year 15, with the exception of

viewpoints 9 and 16, where there would be a moderate and major adverse effect, the effect would reduce to moderate minor adverse/ no effects after 15 years post construction during the operational phase.

- 6.31 WWA do not agree with the classification of viewpoint 45 – from the Essex Way footpath north of the River Ter looking south. The ES assessment is that the mitigation planting would reduce the impact on this view from moderate adverse in year one reducing to minor adverse in year 15. Although the proposed planting would provide screening, they consider that enough of the solar farm would be visible in year 15 for the impact of the view to be assessed as moderate adverse.
- 6.32 The visual effects of the various aspects of the construction phase would be temporary, intermittent, and short term. As the fields are predominantly arable, there would be limited loss of ground vegetation as result of the temporary site compounds, new tracks, medium voltage power stations, substations, and cable trenches. Ground disturbance and waste management would be minimised by site management with full reinstatement over temporary disturbed and excavated areas.
- 6.33 Construction would result in major or moderate adverse visual affects to local residents in close proximity to the Order limits. This is because the proposal would result in construction activity in close range across a wide extent of view. The construction of the development would also be noticeable to users of the Public Rights of Way (PRoW) and road users.
- 6.34 From a landscape and visual perspective, the site is set on generally flat/rolling fields that make up the rolling landscape of the Terling and Boreham Farmland plateau. During the operational stage, aspects that are likely to give significant effects on landscape character and amenity are the solar panels/arrays, site tracks, fencing, CCTV, and the associated single storey substations and transformer/inverter buildings, which would have a maximum height of about 4 metres.
- 6.35 Many key features of the landscape would be maintained, including the undulating landform, woodlands and landscape pattern. However, the proposal would result in the loss of some key characteristics of the landscape, namely the agricultural character and a reduction in the sense of openness given the change of land use and introduction of noticeable and visible new built features in the landscape.
- 6.36 In general terms, the proposal would lead to loss of open character and visibility which can be appreciated from the well-used footpath network. However, the visual effects of the solar farm would be mitigated by its mostly single storey form, existing boundary screening and proposed mitigation.
- 6.37 Although the mitigation scheme would take time to establish, year on year the screening will improve. The additional planting plus use of the existing field boundaries; to minimise the need to create new accessways and breaches of field boundaries, together with plant painted in an appropriate finish and colour, would all help integrate the development into the landscape from the start of the operational phase.

- 6.38 The photovoltaic panels would be seen within the existing field pattern and enclosing vegetation. There is a core area to the north of field PDF1 which could be visible in spite of mitigation. The utilitarian design would not be aesthetically pleasing but would be softened by the existing hedgerows and proposed boundary screening.
- 6.39 From close quarters, the proposal would result in a significant change to high sensitivity visual receptors (local residents and Public Rights of Way (PRoW) users) and medium sensitivity users (motorists).
- 6.40 In relation to the effect that the proposal would have upon local residents' amenity, because the panels are single storey, the presence of intervening boundary treatment and vegetation would broadly screen them from ground floor views. In cases where boundary treatment is limited/open, the arrays would be sited an acceptable distance from residential boundaries so to not be overbearing. At first floor level, it would be possible to see the arrays across an expansive viewpoint. Further consideration to this matter is given in the section on residential living environment below.
- 6.41 The views available on the PRoW would be more extensive, especially as they are used recreationally by walkers, cyclists and horse riders. Given the purpose of their journey and the slower speed at which they would pass through the landscape, PRoW users would be more sensitive to the visual impact of the development. Yet views would be short lived and would be seen in the context of the landscape and roadside frontages. As mitigation planting proposals grow, the sensitivity and harm arising from this change would be reduced such that it would not be unacceptable.
- 6.42 Most receptors using Waltham Road and other vehicle highways would be moving fairly quickly, with drivers in particular having their attention focused ahead. Motorists are not regarded as sensitive to landscape impact as the view they would gain would be short lived.
- 6.43 Overall, the mitigation planting proposed is considered to have a positive impact on the visual impact of the proposals and would successfully screen the solar arrays and other features for most of the viewpoints. However, there would be a loss of longer views and appreciation of the landscape from footpaths due to the mitigation planting.
- 6.44 Decommissioning, at approximately 24 months duration, would be temporary and offset by the restoration of the landscape. The retention of mitigation planting should be 'conditioned' as part of the Decommissioning Strategy.

Landscape Character

- 6.45 The proposal would lead to the change of use of the land from agricultural to solar panels and associated infrastructure. The proposal would lead to a significant change to the agricultural character and there would be a reduction in the sense of openness within the site given the change of land use and introduction of noticeable and visible new built features in the landscape.

6.46 As a result, the proposal would bring about a significant change to the character of the local landscape and would have an impact on the appearance of the environment within which it would be situated. The proposal would lead to a loss of open character which can be appreciated from the well-used footpath network within the area.

6.47 There would be no significant adverse effects on landscape fabric during the construction phase. Chapter 6 of the ES states that there would be 450.6 sq.m of hedgerow loss and 469 sq.m of woodland loss.

6.48 The majority of the removal of trees and hedgerows is shown as breaks through existing hedgerows, otherwise the existing field pattern would remain. Alongside Noakes Lane, more widespread removal of trees and hedgerows is proposed either side of the carriageway.

6.49 As arable fields, there would be minimal loss of ground vegetation as a result of the solar arrays, new tracks, power stations, substations and cable trenches. Mitigation planting is proposed in compensation across the site with advanced planting proposed in selected areas.

6.50 The ES states that the scheme would create the following green infrastructure:

- 8.6 km of native hedgerow with trees
- 20.6 km of native hedgerow enhancement (gapping up and infill planting including 200 new trees)
- More than 3 ha for new native woodland buffer planting in 25 metre copses
- 0.6 ha of linear tree belts
- 272 ha of species rich grassland provided adjacent to and beneath the PV arrays
- An additional 131 ha of species rich grassland provided in open areas not subject to development
- 42 km of species rich mown grassland around the perimeter of the solar arrays
- Bird and bat boxes

6.51 Close to the end of the construction phase, the proposed mitigation proposals would be commenced.

6.52 The main effects on the landscape character on the site would occur during the operational phase because of the presence of solar panels and infrastructure. Construction would be over a wider area at local level but would not result in the loss of key features such as overall landscape structure or areas of local woodland.

6.53 Two District landscape character areas would be directly impacted by the proposals. These are the Terling farmland plateau and the Boreham farmland plateau.

6.54 The majority of the site falls within the Terling farmland plateau which is defined as having the following characteristics:

- Rolling arable farmland,
- Irregular pattern of medium to large fields,

- Scattered settlement pattern with frequent small hamlets, typically with greens and ponds and a network of narrow winding lanes. It is mostly tranquil away from the A1 and A131.

6.55 Designated ancient woodlands including Ringers Woods, Porters Wood and Scarlets Farm are within the Order limits. Ancient woodlands at Sandy's Wood and Lost wood are adjacent to the Order limits. Replanted ancient woodlands at Toppinghoehall Woods are adjacent to the Order limits.

6.56 Listed farmsteads are scattered across the site area at Leylands Farm, Whitehouse Farm, Scarletts Farm, Sparrows Farm, Ringers Farm, Birds Farm and Noakes Farm.

6.57 The combination of the narrow lanes, listed farmsteads, ancient woodlands and agricultural land use give the area a sense of time depth and relative tranquillity once away from the Waltham/Boreham Roads.

6.58 Overall, a medium sensitivity to change is given to the effect of the development upon the whole character area, which includes busier and more built-up areas including Great Leighs, Waltham Road, and Hatfield Peverel.

6.59 Within the wider character area, the proposal would cover a relatively small part of the area, such that the noticeable effects of the development would decline once mitigation planting has been established.

6.60 The effect on landscape character would be limited to the locality of the site. During the operational stage, the construction of the solar panels/arrays, site tracks, fencing, CCTV, and the associated single storey substations and transformer/inverter buildings and battery storage would contrast with the existing agricultural character such that they would result in a significant effect on the landscape and moderate adverse effect on the local area at initial start-up.

6.61 Over time, these significant changes to the landscape character would diminish to a degree as the mitigation proposals establish and reach maturity, such that they would lead to a moderate adverse level of harm with mitigation. But, the changes would still be evident, particularly within the Terling Farmland Plateau where the relative tranquillity and historic features and presence of the River Ter contribute to the higher sensitivity of the character area.

6.62 The Longfield ES divides the landscape character areas into nine separate character areas to provide a more fine-grained assessment of the proposal. The physical extent of the solar farm would fall in four of the local landscape character areas (LLCA's) and the assessment findings, as stated in the ES, during the operation of the proposal can be summarised below:

Ter Valley north

6.63 This has a high sensitivity to change. However, there would be a low magnitude of effects due to only a very small incursion of the physical area of the solar area (resulting in 1% of the LLCA). The proposal would lead to a minor adverse significant effect in construction reducing to negligible in year 15 once the mitigation planting has established.

Western Farmland Plateau

6.64 This has a medium sensitivity to change. The proposal would lead to a medium magnitude of effect (15% of character area) and would have a minor adverse significance of effect during construction. This would reduce to negligible in year 15 once the mitigation planting has established.

Toppinghoehall Woods

6.65 This has a medium sensitivity to change. The proposal would lead to moderate adverse effects in year one reducing to minor adverse by year 15 due to mitigation planting.

Boreham North

6.66 This has medium sensitivity to change. The proposal would lead to low adverse effects in year one with negligible adverse effects by year 15.

6.67 WWA agree that the assessment above is a reasonable conclusion if the character areas are assessed in isolation from each other. However, when considering the Ter Valley and its setting, a different conclusion is reached to that stated in the ES.

6.68 WWA consider that the interplay between the Ter Valley North Local Landscape character area and adjacent Western Farmland plateau to the south of the river should not be ignored. The lower slopes of the Western Farmland Plateau provide part of the setting for the northerly reach of the River Ter.

6.69 The Ter Valley is recognised as a highly sensitive landscape in the LCA at all scales. The solar arrays would be visible from the Essex Way footpath, which runs along the valley floor at this point, for some years before mitigation planting becomes established. The mitigation planting cannot be continuous along the valley side because of the presence of pylons with overhead cables which span across the valley and present a detracting factor in what is a sensitive view.

6.70 The ES concludes that there are insignificant adverse effects on the upper Ter Valley North. Strictly speaking this is true if the assessment is confined to the boundaries of the character area. Yet, because of the loss of view through farmland and the visual intrusion of the solar arrays, in year one there would be a moderate adverse effect on the environs of the River Ter at this point which would reduce to minor adverse once planting is established by year 15. This moderate adverse effect could be eliminated if field PDF1 was removed from the solar array area.

6.71 Within the neighbouring Boreham Farmland Plateau B12, this is defined as having the following key characteristics:

6.72 Irregular field pattern of mainly medium sized arable and pastoral fields marked by hedgerows, banks and ditches

- Small woods and copses provide structure and edges in the landscape
- Scattered settlement pattern with frequent small hamlets
- Concentration of isolated farmstead
- Network of narrow winding lanes.

6.73 The area is dominated by the A12 road corridor and overall has a low to moderate sensitivity to change.

6.74 The southwestern extent of the Order lines crosses into the Boreham Farmland Plateau where the grid connection is made from the solar array fields through to the Bulls Lodge Substation extension. No solar arrays are proposed for this route and the cable routes would be below ground.

6.75 The main impact would be the local extension to the Bulls Lodge Substation and the access works needed to undertake the extension works. The works would be viewed against the backdrop of the existing substation, which has an industrialised character and appearance.

6.76 There would be a minor adverse effect of the development during construction, decreasing to negligible once the construction works are concluded.

Cumulative assessment

6.77 The Longfield ES identifies over 40 proposals which have passed their threshold for inclusion in the cumulative assessment.

6.78 In landscape character terms, the potential proposal with the widest impact on the character areas are the northeast Chelmsford urban extension and Chelmsford Garden Village, which are both located, along with the proposed eastern bypass, between the existing settlement edge and the Order limits.

6.79 The site allocation for the housing to the east of Chelmsford extends to approximately 1 km to the east of the Longfield site with a new countryside park allocation extending to around 200 m of the Longfield site at its furthest extent. The existing gravel workings to the west of Waltham Road provide a 'break' between the Longfield site and the sites allocated for countryside park and housing. The effect of the Longfield proposals on the farmland plateau is minor reducing to negligible so the development of the solar farm would result in negligible cumulative effect within the LCA.

6.80 Additional proposals include the Sheepcoates Farm Quarry and Great Leighs housing allocation.

6.81 When the major developments of the northeast Chelmsford Urban extension, the Garden Village, northern bypass and Longfield are mapped, it is clear that there would be an erosion of the countryside buffer between Chelmsford and Terling. Assessment of impact would be undertaken on a case by case basis, but WWA consider it likely that any assessment would find adverse impacts from the development of open countryside to a new housing scheme or new infrastructure project. When combining Longfield's effect on the Terling Farmland plateau, the cumulative effect is likely to be a moderate adverse effect on the two character areas.

Overall assessment

- 6.82 Once constructed the development would involve very little activity that would disrupt the tranquillity of the landscape. The relatively low level and the horizontal emphasis of the solar arrays means they would be seen to follow the existing topography. The use of stockproof type fencing would be consistent with the wider agricultural landscape, albeit it would be of a height taller than generally used.
- 6.83 Over time, the visual effects of the development would reduce to only viewpoints 9 and 16 as having major adverse impacts and viewpoint 5 as having a moderate adverse impact by year 15. The significant adverse effects would be limited to a very limited part of the Landscape Character Area (LCA) and would be site specific.
- 6.84 The proposal would become gradually more screened as the planting establishes and the perception of the proposal as an extension of urban form would become less and less discernible within the LCA. Whilst the presence of the development in the surrounding development would be clearly noticeable and loss of agricultural fields would remain, it would not undermine its character and any impact would reduce significantly away from the site.
- 6.85 Overall, the mitigation planting proposed would have a positive visual impact on the proposals and would successfully screen the solar arrays and other features for most of the viewpoints.
- 6.86 There would, however, be loss of longer views and appreciation of the open character of the landscape from PRoW's due to mitigation planting.
- 6.87 During decommissioning, all planting measures would remain and there would be a minimal effect on landscape fabric. This would result in a beneficial effect to the site.

Adequacy of the application / DCO

- 6.88 By reason of its mass and scale, the proposal would lead to some significant adverse effects upon landscape character and visual amenity.
- 6.89 However, the significant effects of the proposal would be limited in extent and duration to this location and the visual effects of the solar farm would be mitigated by its mostly single storey form, existing boundary screening and proposed mitigation.
- 6.90 From close quarters, the proposal would result in a significant change to high sensitivity visual receptors (local residents and Public Rights of Way (PRoW) users) and medium sensitivity users (motorists). Yet, with the exception of the harm to the Ter Valley and field PDA1, the localised harm that the proposal would have, could be acceptably mitigated such that it would not diminish the overall quality of the landscape character of the site, or negatively impact upon users experience of walking through or passing along the Local Public Rights of Way and highway network in the long term. Effects upon residential amenity could be mitigated through appropriate mitigation.

- 6.91 The main effect on landscape character would be limited to the locality of the site. Over time, the changes to the landscape character would diminish to a degree as the mitigation proposals establish and reach maturity.
- 6.92 Although the mitigation scheme will take time to establish, year on year the screening would improve. The additional planting plus use of the existing field boundaries; to minimise the need to create new accessways and breaches of field boundaries, together with plant equipment painted in an appropriate finish and colour, would all help integrate the development into the landscape from the start of the operational phase.
- 6.93 Overall, on balance, when weighing up the overall benefits of the proposal and its contribution to promoting renewable energy, the proposal would not have a significant major adverse environmental effect, such that it would warrant a specific objection on this ground.
- 6.94 This is dependent on mitigation landscaping and other requirements set out in the Outline Landscape and Ecological Management Plan (OLEMP) to the Development Consent Order.
- 6.95 With the exception of the impact on the Ter Valley listed above, the development would comply with local planning policy.
- 6.96 No objections are raised to the proposed requirements in principle, although these will continue to be reviewed as part of discussions on the Statement of Common Ground (SoCG).

Natural environment and loss of agricultural land

Trees, Ecology and Biodiversity

Chelmsford Local Plan

- 6.97 Policy DM19 of the Chelmsford Local Plan applies. This states that planning permission will be granted for renewable or low carbon energy developments provided they can iii) can demonstrate no adverse effect on the natural environment including designated sites.
- 6.98 Policies S4 – Conserving and enhancing the Natural Environment, DM16 – Ecology and Biodiversity and DM17 – Trees, Woodland and Landscape Features of the Chelmsford Local Plan are also relevant, as is the adopted Solar Farm SPD.

Key Local Issues

- 6.99 Chelmsford City Council's main concern is that the proposal minimises the ecological and biodiversity impacts of the development and that adequate mitigation is secured.

Consideration

- 6.100 The Environmental Statement identifies and proposes measures to address the potential impacts and effects of ecology brought about by the proposal during the construction, operation and decommission.
- 6.101 The habitats within the development site consist of mainly arable fields with a few improved grassland livestock fields to the northwest. There are mature trees and hedges, small wooded copses and ponds. The River Ter, with adjacent woodland and grassland, bisects the Order limits to the north. The surrounding habitat is mainly arable and mature broadleaved woodland (plantation, semi natural and ancient). Other habitats include residential development and water courses and ponds.
- 6.102 The surrounding landscape is predominantly agricultural including arable and pastoral land use. The field systems are demarked by hedgerows with varying densities of standard trees. Active gravel workings are located to the west of the site to the north of Bulls Lodge Quarry.
- 6.103 There are six sites designated for biodiversity value within 10 – 5 km of the Order limits. The closest of which is the River Ter Site of Special Scientific Interest whose boundary is located immediately next to the Order limits.
- 6.104 31 non statutory designated sites for nature conservation lie within 2km of the Order limits of which Boreham Road Gravel Pits, The Grove, Sandy Wood Scarlets Wood, Ringers Wood, Toppinghoehall Wood, Lost Wood and Porters Wood are located adjacent to the order limits. Boreham Road Gravel Pits is also located within the site by reason of being sited close to Bulls Lodge Substation.
- 6.105 There are no Ancient Woodland within the Order limits, although Toppinghoehall Wood and Porters Wood form an island encircled by the Order limits. Ancient woodland is present at Brickhouse Wood, Hookley Wood, Sandy Wood, Scarlets Wood, Ringers Wood, Scrub Wood and Blakes Wood.
- 6.106 The solar arrays and other apparatus would be sited on grassland areas of the site. The layout of the arrays has allowed for 15 metre buffer zones for the ancient woodland and proposes plots/wintering /breeding birds. Hedgerow removal is proposed to facilitate access into and out of and within the side as well as the widening of the access route along Wheelers Hill / Cranham Road.
- 6.107 The proposal would lead to the temporary loss of hedgerows during construction within the Order limits (for access and grid connections only), loss of habitat for breeding bird assemblage across the scheme and disturbance to breeding Red Kite, Hobby and Barn Owl (also during decommissioning).
- 6.108 The potential impacts identified during the operational phase includes changes to foraging and commuting habitats, potential attraction or avoidance of species, potential nesting/roosting opportunities, and indirect benefits from a lapse in agricultural practices.

- 6.109 The scheme has been designed to avoid impact to important habitats including ancient woodland, veteran trees, marshy grassland, hedgerows, running water and ponds.
- 6.110 The embedded mitigation would include habitat creation and replacement within inclusion of undeveloped buffers to the important habitats. The proposal seeks to improve ecological and recreational connectivity across the site. Additional tree and woodland planting are proposed and would increase woodland cover in this area and the Chelmsford District, in line with the Council's Climate and Ecological Emergency declarations and Action Plan.
- 6.111 Significant biodiversity enhancements would be created through planting and appropriate management of wildlife friendly habitats including the provision of large planting belts along the site boundaries. The enhancement forms part of a suite of proposed ecological improvements that would be secured by an Outline Landscape and Ecological Management Plan (OLEMP).
- 6.112 The enhancement includes the provision of 8.6 km of new native hedgerows and 20.6 km of hedgerow enhancement. 23.2 ha of land would be utilised for natural regeneration, 3 ha of native woodland and buffer planting to provide ecological corridors, 0.6 ha of linear tree belts.
- 6.113 Approximately, 272 ha of species rich grassland would be provided between the arrays as well as 131 ha's of land in open areas and 42 km of mown paths around the perimeter of the areas. Other enhancement would include the provision of 15 metre buffer zones around ancient woodlands.
- 6.114 A Biodiversity Net Gain Assessment has been completed in accordance with the DEFRA 3.0 metric. This confirms that the proposal would deliver 79% habitat and 20% linear overall net gains through habitat retention, creation and enhancement primarily from the change of arable fields into grassland which has greater ecological value when managed as a wildflower meadow.
- 6.115 Mitigation would be embedded in the design to successfully integrate the development proposals so that impact upon habitats and species are avoided, reduced and compensated for.
- 6.116 The Outline Landscape and Biodiversity Management Plan, the details of which to be agreed at Regulations (conditions) stage, would focus on investigating the possibilities to limit fencing and allow for permeability of mobile species across the landscape, maximising environmental benefits.
- 6.117 The construction of the proposal would require temporary lighting which has potential to spill into adjacent habitats. Construction working hours would be 7 am to 7pm Monday to Saturday and during construction in the winter months, mobile lighting towers with a power output of 8KVA would be used. Any lighting required or the construction of the proposal would be directed away from existing restrained and sensitive habits to minimise light disturbance.
- 6.118 Lighting would be directed downwards and away from boundaries. No visible lighting would be used along the side perimeter fenceings, except from the site entrance points. Infra-red lighting would be provided by the CCTV/security system to provide night vision functionality. Lighting would be provided at enclosure entrances to the Solar Stations. These would be annually operated. PIR (Passive InfraRed) operated lighting would be provided to the Longfield substation, BESS and at site entrances and access to warehouse buildings. Luminaires would

differ throughout the site, but lighting could be controlled and managed by the Outline Ecological Management Plan.

- 6.119 Decommissioning impacts would be similar to those occurring during construction. The decommissioning of the scheme is unlikely to impact upon designated sites and there would be no fragmentation of habitats or populations using habitats within designated sites. Decommissioning would be unlikely to affect species mortality.
- 6.120 A Decommissioning strategy has been submitted with the ES and sets out a range of potential mitigation and management measures in relation to Ecology. These include the implementation of precautionary working method statements, the use of avoidance methods and provision of buffer zones, especially regarding bats and badgers and the undertaking of ground clearance works outside of the bird breeding season (March to August).
- 6.121 Any impacts arising from decommissioning would need to be considered fully in line with relevant legislative and policy requirements.

Adequacy of the application/DCO

- 6.122 The proposal is not expected to lead to any significant adverse residual effects upon ecology, trees and biodiversity. The scheme has been designed to avoid impact to important habitats including ancient woodland, veteran trees, marshy grassland, hedgerows, running water and ponds and ecology.
- 6.123 Significant biodiversity enhancements would be created through planting and appropriate management of wildlife friendly habitats including the provision of large planting belts along the site boundaries, the creation of land for natural regeneration and the formation of natural woodland and species rich grassland. The Biodiversity Net Gain Assessment confirms that the proposal would deliver 79% habitat and 20% linear overall net gains through habitat retention, creation and enhancement primarily from the change of arable fields into grassland which has greater ecological value when managed as a wildflower meadow.
- 6.124 The proposal would deliver significant ecological and environmental improvements. Requirements (conditions) relating to the appliance of an Outline Ecological Management Plan would ensure the protection and conservation of ecology and trees during operation during the operation of the development.
- 6.125 Subject to no objections being raised to the proposal by other statutory consultees including Natural England, the development would comply with local planning policies.
- 6.126 No objections are raised to the proposed requirements in principle, although these will continue to be reviewed as part of discussions on the Statement of Common Ground (SoCG).

Loss of Agricultural Land

Chelmsford Local Plan

- 6.127 Policy DM19 of the Chelmsford Local Plan applies. This states that planning permission will be granted for renewable or low carbon energy developments provided they can iii) can demonstrate no adverse effect on the natural environment including designated sites.
- 6.128 Policy S4- Conserving and enhancing the Natural Environment, of the Chelmsford Local Plan states that the Council will seek to minimise the loss of best and most versatile agricultural land (grades 1, 2 and 3a) to major development. The adopted Solar Farm SPD is also relevant.

Key Local Issues

- 6.129 Chelmsford City Council's main concern is the loss of Best and Most Versatile agricultural land and disruption of agricultural activities as a consequence of the loss of agricultural land.

Consideration

- 6.130 The NPPF at paragraph 174 (b) states that planning policies and decisions should contribute to and enhance the natural environment by recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services - including the economic and other benefits of the best and most versatile agricultural land.
- 6.131 Annex 2: Glossary of the NPPF defines Best and Most Versatile (BMV) agricultural land as land in Grade's 1, 2 and 3a of the Agricultural Land Classification.
- 6.132 The need to protect BMV land is reiterated within the Council's adopted Solar Farm SPD which states that the land of such quality is an important area for food protection and reducing the agricultural land available increases the reliance on the importation of food, with subsequent impacts such as increased carbon emissions. The SPD advises that developments in the first instance should consider sites on previously developed land, brownfield or contaminated land, industrial land or land of grades 3b, 4 or 5.
- 6.133 An agricultural land survey was undertaken between September and December 2020 at EIA scoping stages with baseline conditions analysis focused on an area of about 453 ha within the Order limits.
- 6.134 At the time of the survey, most of the land was under arable use (cereals and oilseed rape), with potatoes in the south, beef pasture in the north and an area of sugar beet. The land use has not changed since the surveys took place, although some crops may be rotated, and fields left fallow or grazed.
- 6.135 The site was found to comprise land limited to Grade 2 (55 hectares / 12% of the site boundary), 3a (101 hectares/ 22% of the site boundary), 3b (262 hectares / 58% of the site

boundary) 4 (22 hectares/ 5% of the site boundary) and non-agricultural/unknown (37 hectares/ 8 % of the site boundary).

- 6.136 No areas of a grade one agricultural land would be used
- 6.137 About 150 hectares (34% of the site boundary) would be Best and Most Versatile (BMV) land and would be converted to the solar farm for the lifetime of the scheme, with an additional 15 hectares (6 hectares of BMV) would be lost permanently.
- 6.138 The proposal would lead to a significant loss of BMV agricultural land. The impact of would be of high magnitude; as more than 20ha of agricultural land will be lost. Due to the nature of the proposal, it would not be possible to mitigate against the loss of the 34% of BMV agricultural land.
- 6.139 Most effects relating to the loss of agricultural land would arise during the construction of the scheme and there would be no new potential or additional impacts on agricultural land during the operation of the scheme.
- 6.140 The ES considers that as the loss of agricultural land would be reversible after the use ceases the temporary effect of the scheme is not significant. Yet, the proposal is for a forty-year timeframe which by its very nature would represent a considerable period of time for the loss of agricultural land. The forty-year timeframe would not be perceived by those who frequent the area as being temporary.
- 6.141 It is possible the land will become sterile and unworkable given the years of not being worked for agricultural purposes. However, an Outline Soil Resource Management Plan (SRMP) appended to the Outline Construction Environmental Management Plan (OCEMP) has been prepared to set out measures to ensure the protection and conservation of soil resources on site during operation and identifies best practice to maintain the physical properties of soil on site including the management of traffic to reduce the risk of compaction.
- 6.142 Prior to the commencement of decommissioning, an assessment would be made of the land and soil and a programme of remedial action would be agreed to return land back to agricultural use. The programme may include subsoiling and installation of a field drainage scheme and there is potential for an increase in soil organic matter content during the lifetime of the solar farm. The ES suggests that the land would be the same or better condition than it currently is as a result of expected natural enhancement through approximately 40 years of being set aside and remedial actions being undertaken.

Adequacy of the application /DCO

- 6.143 The proposal would lead to the loss of about 150 hectares (34% of the site boundary) of Best and Most Versatile Agricultural Land. This would be broken up in Grade 2 (55 hectares) and 3a (101 hectares). The loss of this amount of BMV land would be significant and would be of high magnitude and could not be mitigated or offset elsewhere.

- 6.144 The loss of 34% of BMV land is significant and weighs against the proposals as National and Local Planning policies seek to protect this finite resource.
- 6.145 Yet, the loss of agricultural land would be reversible after the use ceases, albeit the proposal is for a forty-year timeframe which by its very nature would represent a considerable period of time for the loss of agricultural land. The forty-year timeframe would not be perceived by those who frequent the area as being temporary.
- 6.146 The removal of arable production is a material consideration, but this must be balanced against the benefit of the proposal is reducing greenhouse gas emissions through renewable and low carbon energy and associated infrastructure.
- 6.147 As outlined above, the proposal would deliver significant ecological and environmental improvements, and requirements (conditions) relating to the appliance of an Outline Soil Resource Management Plan (SRMP) appended to the Outline Construction Environmental Management Plan (OCEMP) would ensure the protection and conservation of soil resources on site during operation during the operation of the development.
- 6.148 On balance, it is considered that these measures are likely to outweigh the loss of Best and Most Versatile Agricultural Land, particularly when considered in the wider context of the proposal in its totality. Chelmsford City Council does not therefore, object to the loss of agricultural land in principle.
- 6.149 No objections are raised to the proposed requirements in principle, although these will continue to be reviewed as part of discussions on the Statement of Common Ground (SoCG).

Historic Environment

Designated and non-designated sites excluding archaeology

Chelmsford Local Plan

- 6.150 Policy DM19 – Renewable and Low Carbon Energy applies. This states that planning permission will be granted for renewable or local carbon energy developments provided they ii) avoid or minimise impacts on the historic environment.
- 6.151 Policies S3 –Conserving and Enhancing the Natural Environment, DM13 – Designated heritage assets and DM14 – Non designated heritage assets of the Chelmsford Local Plan are also relevant, as is the adopted Solar Farm SPD.

Key local issues

- 6.152 The main issues relate to the impact of the development on designated and non designated heritage assets, protected lanes. Chelmsford City Council also wishes to ensure that adequate mitigation is secured.

Consideration

- 6.153 The site covers 453 ha of largely arable agricultural land, with a framework of lanes, field boundaries and woodlands. The wider rural landscape comprises a number of villages, hamlets farms, houses and cottages, with a concentration of development along and near to the Waltham Road/Boreham Road closest to the application site.
- 6.154 The Environmental Statement Cultural Heritage Assessment uses a study area of 1km for designated heritage assets and 3km for designated heritage assets of the highest significance, with non-designated heritage assets nearby the site also assessed.
- 6.155 There are no designated heritage assets within the site boundary. There are 73 listed buildings within a 1km study area, including three Grade I listed buildings comprising Ringers Farmhouse, the Church of St Mary the Virgin Great Leighs and the Church of St Andrew, Boreham. One Grade II* listed building, the Old Rectory, is located within 1 km of the study area. The remaining listed buildings are Grade II.
- 6.156 Terling Place Registered Park and Garden falls partly within the 1 km study area and surrounds Grade II listed Terling Place House on all sides. Other nearby Registered Parks and Gardens include at New Hall and Boreham House.
- 6.157 Three Conservation Areas fall within 1 km of the site and include Terling Conservation area (650 m to the north-east of the site), Boreham Road/Plantation Road Conservation Area (300 metres to the south of the site, separated by the A12 and railway line) and Boreham Church Road, about 1 km from the site.
- 6.158 Approximately 151 non archaeological assets would be located within the 1 km study area of which approximately 13 are located within the Order limits.
- 6.159 Noakes Farm Lane, Birds Farm Lane and Noakes Farm Road comprise protected Lanes and are sited within the Order limits. Terling Hall Road lies to the east and north of the Order limits.
- 6.160 The assessment provided gives a detailed and thorough evidence base to aid the understanding of the heritage assets and their settings' which may be affected by the development proposal. The scope of the document includes an adequate study area to capture any heritage asset which may be affected.
- 6.161 All relevant designated heritage assets, including listed buildings, Conservation Areas, Scheduled Monuments and Registered Parks and Gardens are identified. The non-designated heritage assets in the vicinity of the site are adequately identified. Previous comments to include additional heritage assets nearby the site have been addressed.
- 6.162 There would be short term impacts due to construction traffic. Long term heritage impacts ranging from negligible to low are identified post mitigation. The various setbacks of panel locations and the landscaping proposals would partly mitigate the impacts.

- 6.163 The level of harm identified within the assessment is generally concurred with, but there are several locations where there is additional harm. The group of buildings comprising Stocks Farm, The Thatched Cottage, Stocks Cottages, Little Holts (Grade II listed) and Whalebone Cottages which are sited to the east and west of Boreham Road, rely on a rural setting which contributes to their significance, especially Stocks which was directly associated with the agricultural landscape. Stocks Farm is a traditional farmstead with group value and should be considered as medium value/significance.
- 6.164 The landscaping and offset proposed to the western side of field PDA 28 is not adequate to mitigate the impacts. It has previously been suggested the western limit of PDA 28 should be moved away from this group of historic buildings, which is not reflected in the current scheme.
- 6.165 There is disagreement to the assessment of significance of Whitehouse Farm and Birds Farm which are considered to have a negligible and minor adverse effect in the ES.
- 6.166 Whitehouse Farm should be considered to be of medium significance, reflecting its group value and moat. Birds Farm should be considered to be of high significance as high quality sixteenth century building. The level of significance impacts on the magnitude of impact.
- 6.167 Noakes Lane is a protected lane, on the eastern part it forms part of the setting to Noakes Barn (grade II listed). Where PDA 11 and PDA 12 enclose the lane on both sides, the impact on its setting would be considerable. Further mitigation should be provided, with additional setbacks and landscaping.
- 6.168 The heritage assets all rely on an essential rural setting. This will notably change through the development, due to the introduction of solar panel arrays, fencing, tracks and other structures and features, which will erode the rural landscape setting. The level of harm varies but is generally at the lower end of the less than substantial harm scale, with the most notable impacts where there is a closer proximity. In the context that any heritage harm is a matter of great weight, the mitigation measures proposed would reduce the harm, but not avoid it.
- 6.169 As identified above there is a need for further mitigation works at Stocks Farm (and the adjacent buildings) and Noakes Farm Lane. The detail, phasing and management of the landscaping will also be important in maximising mitigation.

Adequacy of application / DCO

- 6.170 In weighing applications that directly or indirectly affect designated and non-designated heritage assets, a balanced judgement is required having regard to the scale of any harm or loss and the significance of the heritage asset.
- 6.171 In this case, the proposal would only lead to a significant adverse harm in relation to a number of assets during the construction of the scheme and that harm would be temporary. During operation, no significant residual effects on cultural heritage that would warrant a specific objection are proposed. Any residual effects from the scheme would be of low level and could be mitigated against.

6.172 Any harm to a designated heritage asset should be balanced against any public benefit delivered by the proposals. Overall, on balance, when weighing up the overall benefits of the proposal and its contribution to promoting renewable energy, the proposal would not have a significant adverse cultural heritage effect, such that it would warrant a specific objection on this ground.

6.173 No objections are raised to the proposed requirements in principle, although these will continue to be reviewed as part of discussions on the Statement of Common Ground (SoCG), particularly to discuss the concerns relating to the need for further mitigation.

Archaeology

Chelmsford Local Plan

6.174 Policy DM19 – Renewable and Low Carbon Energy applies. This states that planning permission will be granted for renewable or local carbon energy developments provided they ii) avoid or minimise impacts on the historic environment.

6.175 Policies S3 –Conserving and Enhancing the Natural Environment and DM15 – Archaeology of the Chelmsford Local Plan are also relevant, as is the adopted Solar Farm SPD.

Key Local Issues

6.176 The main issues relate to the possible destruction and harm to archaeological assets within / adjacent to the site.

Adequacy of application/DCO

6.177 Chelmsford City Council will be guided by Essex County Council on archaeology as the lead Authority covering the proposal site. This includes comments regarding requirements (conditions).

Residential living environment

Chelmsford Local Plan

6.178 Policy DM19 – Renewable and Low Carbon Energy applies. This states that planning permission will be granted for renewable or local carbon energy developments provided they i) do not cause demonstrable harm to residential living environment.

6.179 Policies DM29 – Protecting Living and Working Conditions and DM30 – Contamination and Pollution of the Chelmsford Local Plan are also relevant, as is the adopted Solar Farm SPD.

Key Local Issues

6.180 Chelmsford City Council consider the key local effects to be noise and vibration impacts during the construction phase, notably where residents are sited within close proximity/adjacent to the site. Other impacts include the operation of plant and the effect of the solar panels on glint and glare.

Consideration

6.181 Chapter 15 of the ES deals with the impact upon Human Health. There is no consolidated methodology or practice for the assessment on human health, although regard is had to ES chapters on Transport and Assess, Noise and Vibration, Air Quality and Socio Economics.

6.182 The arrays themselves would be passive during operation, they have no running parts and emit no carbon, noise smell or light. Once installed, the system itself needs minimum maintenance with no permanent on-site staff.

6.183 The study area is mostly rural and sparsely populated. There are a few individual residential properties within close proximity to the Order limits, some of which are within 10 metres of the boundary along Terling Hall Road and Waltham Road.

6.184 The closest cluster of residential properties are located 60 metres away from the Order limits boundary on Braintree Road, near Fuller Street. There are a few residential properties located 200 m west of the Order limits on Fairstead Hall Road.

6.185 The substation at Bulls Lodge is 500 metres away from the village of Boreham. A residential property, Brick House Farm, is located to the west of the existing substation. It is not accepted that the closest residential properties to the substation are located within Boreham.

6.186 Public Rights of Way (PRoW) cross the site.

6.187 The site also adjoins the Waltham Road to the west and the A12 which would further reduce the perceived noise impact from either on-site plant or construction noise.

6.188 In relation to noise, the ES states that there would be negligible to minor adverse impacts on surrounding receptors arising from the construction of the scheme. Any period of regular high construction noise levels would not exceed one month. The Outline Construction Environmental Management Plan (OCEMP) contains measures to mitigate and minimise adverse noise effects.

6.189 Residential properties are defined as sensitive noise receptors.

6.190 Users of the Public Right of Way (ProW) are also defined as sensitive receptors, but due to the transient nature of users, they would not be subject to long term noise experience and any noise experienced would be when users are within proximity to the scheme.

6.191 The dominating noise source within the Order limits has been observed to be road traffic from the surrounding road network.

- 6.192 The plant used in association with the development can produce sound, but this can be acoustically rated and managed and rated such that acceptable noise levels are achieved. The Noise Statement submitted with the applicant considers the operational effect upon residential receptors to be low.
- 6.193 It is acknowledged that during the construction phases, there will be periods when works are likely to be audible to at nearby receptors. A Construction Traffic Management Plan is proposed to minimise against these temporary impacts. Construction/delivery hours would also be restricted to 7 am - 7pm (Monday to Saturday on the main Solar Site. Construction working hours on the Bulls Lodge Substation extension would run from 7:00 am to 19:00 pm Monday to Saturday, with the exception of overhead line works which would run from 7:00 am to 19:00 pm Monday to Sunday.
- 6.194 Within Chelmsford, the proposal would be visible from a cluster of residential properties along and next to Waltham Road. The panels themselves, at a maximum of 3 metres in height are not considered to be overbearing in relation to proximity from existing residential properties.
- 6.195 From close quarters, the proposal would result in a significant change in outlook, but the combination of existing and proposed vegetation and the panels themselves would generally screen views of other panels that would be a similar height. The impact of residential first floor views would only offer a more expansive viewpoint and would not be unacceptable given their separation distance and the inclusion of substantial planting boundaries.
- 6.196 In relation to glint and glare, the solar panels are designed to absorb light, rather than reflect light. Although the surface is glass, it is not reflective in the same way as a mirror or window.
- 6.197 A glint and glare study has been submitted as part of the ES. The assessment considers that the initial impact of the proposal would be classed as 'high' for 10 and low at 7 receptors.
- 6.198 For those receptors where there is no existing screening, mitigation in the form of planting, secured by the Outline Landscape and Ecological Management Plan (OLEMP), is recommended. The mitigation would include hedgerows; grown, infilled, gapped up and maintained to a height of at least 3 metres. Until the hedgerows reached sufficient height, a temporary 3 m high solid wooden hoarding would be required.
- 6.199 The nature of the mitigation is that it is likely to obstruct, as a minimum, ground floor views of the reflecting panels. With mitigation in place, the impacts would be classed as 'low' for seven residential receptors and none for all the others.
- 6.200 Overall, with mitigation measures in place, the Glint and Glare assessment considers the impact of the proposal on residential amenity to be negligible.
- 6.201 At face value, the submitted Assessment appears to be a detailed and thorough report and Chelmsford City Council cannot offer any evidence to refute it. Therefore, the City Council is content to accept the findings of the report as read.

6.202 However, it should be noted, as is the case with Braintree District Council, that neither Local Planning Authority has the relevant specialist expertise to make a technical assessment of the Applicants Report. Therefore, the final decision as to the acceptability of the proposal on residential glint and glare, will need to be made by the Planning Inspectorate and Secretary of State as part of the decision making process.

6.203 It is noted that the temporary wooden hoarding required as part of the mitigation would be substantial in size and duration and could result in some visual impact. Further, as hedgerows and planting are likely to be sited next to the hoarding, there may be challenges in removing it once the mitigation planting has grown up, as the roots of the new planting may be entwined within the foundations. The effect of this would need to be considered as part of the requirements and Outline Ecological Management Plan (OLEMP).

6.204 Precise details of the location of CCTV and security can be secured by condition/ requirements so that it does not lead to loss of privacy.

6.205 Effects on residential properties at Decommissioning are likely to be similar to the construction effects of the development. In relation to noise and vibration, the effect on receptors would vary according to the locations and types of work taking place. The Outline Construction and Environmental Management Plan and Decommissioning strategy set out measures and mitigating for managing noise and vibration and the effects upon residential properties. This would need to be managed and secured by requirements (condition).

Adequacy of the application /DCO

6.206 The proposal would lead to a clear and noticeable change in residential living environment, particularly for those residents living immediately adjacent to the Order limits. Yet a change in residential living environment does not in itself mean that a proposal is harmful.

6.207 In this case, any perceived and direct effects upon living environment could be mitigated against and the ES concludes that the proposal would not lead to any material and significant adverse effect.

6.208 Although the mitigation scheme will take time to establish, year on year the screening will improve. The additional planting plus careful siting and screening of boundary treatment, CCTV and other features would all help integrate the development into the landscape and reduce the impact upon residential living environment from the start of the operational phase.

6.209 Overall, on balance, when weighing up the overall benefits of the proposal and its contribution to promoting renewable energy, the proposal would not have a significant major adverse environmental effect, such that it would warrant a specific objection on this ground.

6.210 This is dependent on mitigation landscaping and other requirements (conditions) set out in the Outline Landscape and Ecological Management Plan (OLEMP), Outline Construction and Environmental Management Plan, Decommissioning Strategy and other documents.

6.211 No objections are raised to the proposed requirements in principle, although these will continue to be reviewed as part of discussions on the Statement of Common Ground (SoCG).

Noise, Vibration, Air Quality, and contamination

Noise and Vibration

Chelmsford Local Plan

6.212 Policy DM19 – Renewable and Low Carbon Energy applies. This states planning permission will be granted for renewable or local carbon energy developments provided they i) do not cause demonstrable harm to residential living environment.

6.213 Policies DM29 – Protecting Living and Working Conditions and DM30 – Contamination and Pollution of the Chelmsford Local Plan are also relevant, as is the adopted Solar Farm SPD.

Key Local Issues

6.214 The key local effects on noise and vibration are those arising from the construction and decommissioning stage and also the day to day running of plant.

Consideration

6.215 The ES confirms that baseline noise monitoring has been carried out to establish the existing noise climate in the area. Sensitive receptors which have the potential to be affected by the scheme were identified.

6.216 During the surveys the dominant noise source at the majority of the locations was observed to be road traffic from the surrounding road network, particularly at monitoring locations located near to the A12. At more distant monitoring locations noise from the A12 was less audible although noise from passing vehicles on nearby roads was still observed.

6.217 Construction noise levels are predicted to be at their highest during site preparation, which include ground works and piling activities also leading to vibration. The duration of any construction noise and vibration effects would be short-term, with no permanent residual effect once works are completed. Working hours during construction will be from 7am to 7pm Monday to Saturday, with worker trips the hour before and after the core working hours.

6.218 There would be a daily maximum of 96 HGV's on the strategic road network of which 50 HGV's would use the local highway network to access the site along Wheelers Hill, Waltham Road and Cranham Road with the remainder travelling to/from Bulls Lodge Substation along Generals Lane.

6.219 Construction noise levels and vibration are proposed to be controlled through a number of mitigation measures and the use of a Construction Environmental Management Plan (CEMP).

Air Quality

Chelmsford Local Plan

6.220 Policy DM19 – Renewable and Low Carbon Energy applies. This states planning permission will be granted for renewable or local carbon energy developments provided they i) do not cause demonstrable harm to residential living environment.

6.221 Policies DM29 – Protecting Living and Working Conditions and DM30 – Contamination and Pollution of the Chelmsford Local Plan are also relevant, as is the adopted Solar Farm SPD.

Key Local Issues

6.222 The key local effects on air quality are those associated with the construction phase and specifically the dispersion of materials from the works areas into neighbouring residential properties and those association with emissions from construction vehicles. There is also potential for wind blown dust.

Consideration

6.223 In relation to air quality, the ES has considered this against the impact upon traffic flows, dust and the construction of Battery Energy Storage System, which has been assumed to be constructed in a single phase, the worst in terms of road traffic numbers and expose of sensitive receptors to dust.

6.224 CCC will be guided by Essex County Council on those matters in relation to the effect upon the local highway network.

6.225 In relation to decommissioning, whilst details are not fixed at this stage, it is expected that the decommissioning stage would be similar in nature to construction, albeit of a slightly shorter duration with fewer traffic movements and equipment.

6.226 The air quality within the site is generally considered to be good and there are no Air Quality Management Areas within 5 km of the Order limits. Dust generation is expected to occur during the duration of the site works and a large dust emissions magnitude is anticipated for construction phase activities mainly attributable to piling works. There is medium risk of dust soiling to sensitive receptors.

6.227 The sensitivity of the area is low for human health impacts due to low background particulate matter concentrations. This means the risk of dust impact for construction activities is classified as having low risk to human health.

6.228 The operation of the scheme is not anticipated to have a significant impact upon local air quality, meaning the effect would be negligible.

Contamination

Chelmsford Local Plan

- 6.229 Policy DM19 – Renewable and Low Carbon Energy applies. This states planning permission will be granted for renewable or local carbon energy developments provided they i) do not cause demonstrable harm to residential living environment.
- 6.230 Policies DM29 – Protecting Living and Working Conditions and DM30 – Contamination and Pollution of the Chelmsford Local Plan are also relevant, as is the adopted Solar Farm SPD.

Key Local Issues

- 6.231 The key local issues are those associated with the construction phase and the safety/operation of the battery storage.

Consideration

- 6.232 Due to the nature of the development, the proposal is not expected to lead to contamination. There would be no 'end users' who could be affected by any contamination in the ground.
- 6.233 CCC will be guided by Essex County Council in relation to surface water drainage and the effect of contamination on that.
- 6.234 A Battery Safety Management Plan has been included within the ES concerning the key provision of Battery Energy Storage System (BESS) including minimising the risk of fire and the associated contamination that could arise from this. CCC will be guided by other relevant stakeholders, such as the Health and Safety Executive, regarding battery safety and contamination.
- 6.235 Decommissioning, through the removal of equipment and reinstatement of ground, is anticipated to span 12-14 months with impacts on local air quality confined to this time. Effects are expected to be short term, temporary and negligible.

Adequacy of application/DCO with regard to Noise, Vibration, Air Quality, and contamination

- 6.236 The proposal is not expected to lead to any significant residual effects on noise and vibration, air quality and contamination. Any effects arising from the development could be mitigated against through measures such as the implementation of the Construction Environmental Management Plan (CEMP) and other requirements.
- 6.237 Once operational, the proposal would be subject to any relevant public health and protection legislation, with responsibility for some service and operational requirements given to the relevant statutory undertaker / service provider.

6.238 Chelmsford City Council therefore raises no objections to the proposal on these grounds.

6.239 No objections are raised to the proposed requirements in principle, although these will continue to be reviewed as part of discussions on the Statement of Common Ground (SoCG).

Traffic and highway safety

Chelmsford Local Plan

6.240 Policy DM19 – Renewable and Low Carbon Energy applies. This states that planning permission will be granted for renewable or local carbon energy developments provided they will not have a detrimental impact upon highway safety.

6.241 Policies DM27 – Parking standards, DM29 – Protecting Living and Working Conditions and DM30 – Contamination and Pollution of the Chelmsford Local Plan are also relevant, as is the adopted Solar Farm SPD.

Key Local Issues

6.242 The key local issues relate to the number, size, timing and routing of vehicles as part of the construction and decommissioning of the proposals. Also, the suitability of the vehicles on the highway network, the effect of glint and glare and the general disturbance that they may cause.

Consideration

6.243 A Transport and Access Statement has been submitted as part of the ES. This considers the potential effects of the scheme on traffic and transport during the construction, operation and decommissioning phases.

6.244 A Construction Traffic Management Plan (CTMP) and Glint and Glare study has been submitted that considers the specifics of the proposal in respect of site access, routing, vehicle frequency, condition surveys and effect of Glint and Glare.

6.245 The CTMP shows that the Solar Farm site would be accessed from Waltham Road. Two access roads are included within the Order limits. These are Wheelers Hill and Cranham Road to the west of the Solar Farm Site and Generals Lane to the south of the Bulls Lodge Substation Site. Internal access tracks would be formed throughout the site. Minor widening works are proposed along Wheelers Hill, Cranham Road and Waltham Road within the existing highway boundary.

6.246 It is proposed to use Waltham Road/Boreham Road and A130 Essex Regiment Way via Wheelers Hill, Cranham Road and Boreham Road for access to and from the site in the construction, operation and decommissioning stages. Generals Lane would be used for access to the Bulls Lodge Substation site.

6.247 Due to other construction commitments, currently access to Generals Lane is taken from the A130 Essex Regiment Way through Channels Drive, a residential area, rather than the historical route over the A12. To safeguard residential amenities and minimise traffic and disturbance on local roads, Chelmsford City Council considers it preferable if access to Generals Lane is taken from the A12 where possible.

6.248 The main construction phase for the site is anticipated to be between January 2024 and December 2025. Although this may be extended, and the battery storage system may be phased over a 5-year period. The assessment is based on a reasonable worst-case scenario of the rapid construction period, that would generate the highest number of peak hour and daily road trips on the local network.

6.249 In relation to construction and decommissioning, it is inevitable that the development would result in some impacts on the road network, but this would be restricted during the construction / decommissioning phases where there may be some disruption to local traffic. The use of appropriate traffic management regimes, as is commonplace with schemes of this nature, would minimise any difficulties. Whilst there would be a degree of inconvenience, this is likely to be relatively short lived.

6.250 CCC will be guided by Essex County Council on transport and access matters, including the effect upon Public Rights of Way (PRoW) as the Local Highway Authority covering the proposal site.

6.251 A glint and glare assessment has been submitted as part of the proposal. CCC consider the relationship of glint and glare to the highway and residential amenities are material to the proposals.

6.252 The effect of glint and glare upon the Highway network is a matter for ECC Highways and CCC will be guided by their comments.

Adequacy of application / DCO

6.253 The effect of the proposal on traffic and highway safety will be a matter for ECC Highways.

6.254 However, it is not expected that the proposal would lead to significant adverse impacts upon the highway network. Any traffic and highway impacts could be most likely designed in/conditioned such that that the proposal is not expected to be harmful on highway grounds.

6.255 CCC will be guided by ECC Highways regarding the provision of appropriate requirements. However, CCC reiterates its preference to use Generals Lane/A12 for construction access to the Bulls Lodge Substation site.

Flooding and drainage

Chelmsford Local Plan

6.256 Policy DM18 –Flooding / SUDS A) states that planning permission will only be granted where (i) it can be demonstrated that the site is safe from all types of flooding, either because of existing site conditions or through flood risk management from the development, now and through the lifetime of the development; and (ii) it does not worsen flood risk elsewhere.

6.257 Part C states that all major development will be required to incorporate water management measures to reduce surface water run-off and ensure that it does not increase flood risk elsewhere. The principal method to do so should be the use of Sustainable Urban Drainage Systems (SuDS). As well as providing appropriate water management measures, where possible SuDS should be multi-functional to deliver benefits for the built, natural and historic environment.

6.258 Policies S2 – Addressing Climate Change and Flood Risk and DM30 – Contamination and Pollution of the Chelmsford Local Plan are also relevant, as is the adopted Solar Farm SPD.

Key Local Issues

6.259 The key local issues are to ensure that the development does not lead to unacceptable flood risk and that the Sustainable Drainage Strategy is robust and provides suitable mitigation. Regard must be had to the safety and storage of water relating to the Battery Storage System (BESS).

Consideration

6.260 Chapter 9 of the ES deals with Water Environment and is accompanied by a Flood Risk Assessment and Sequential and Exceptions Tests.

6.261 The document covers the entirety of the proposal and sets out measures to address the potential impact on waterbodies such as ponds, lakes, rivers and ground water.

6.262 Regard has been had to matters including ecology (including Great Crested Newts and Riparian mammals), nature conservation and the effect of climate change; which is predicted to alter future fluvial flood risk and drainage through increased storm intensity and rainfall patterns.

6.263 The construction of the scheme would take place in accordance with a Construction Environmental Management Plan which contains a range of measures to deal with matters including but not limited to pollution control and water management.

6.264 Cable routes at the south-west margin of the Order limits that form part of the Grid Connection Route connecting the Battery Energy Storage System (BESS) to Bulls Lodge

Substation would cross Flood Zone 3 at Boreham Tributary. The cable route would be installed beneath the water course using underground techniques including directional drilling.

6.265 During the operation, most of the scheme would be located within flood zone one. There would be a minimum buffer of 8 metres around water courses (measured from the water channel edge). A Drainage Strategy has been prepared to deal with matters such as run off, fire water storage for the BESS, the creation of drainage outfalls and the operation and management of drainage infrastructure, including those at Bulls Lodge Substation.

6.266 The effect of flooding and drainage is a matter for ECC SUDS and the Environment Agency and CCC will be guided by their comments.

Adequacy of the application/DCO

6.267 The effect of the proposal on flooding and SUDS will be a matter for ECC SUDS and the Environment Agency.

6.268 However, it is not expected that the proposal would lead to significant adverse impacts upon flood risk, drainage and surface water such that they could warrant a specific objection on this ground. Any impacts arising from the scheme could be most likely designed in/ conditioned such that that the proposal is not expected to be harmful on water management grounds.

6.269 CCC will be guided by ECC SUDS and the Environment Agency regarding the provision of appropriate requirements.

Socio economic and other matters

Chelmsford Local Plan

6.270 Strategic Policy S7 – The Spatial Strategy states that beyond the main settlements, the Council will support diversification of the rural economy and the conservation and enhancement of the natural environment. The adopted Solar Farm SPD also refers.

Key Local Issues

6.271 The proposal has potential to deliver economic and social benefits. Efforts should be undertaken to ensure that a significant amount of these benefits are localised.

Consideration

6.272 Chapter 12 of the ES deals with Socio – Economics. It is estimated that 380 direct full time employment jobs would be created in the construction phase (with a total of about 428 net jobs per annum). Only 8 would become permanent roles. At decommissioning, it is assumed that a similar number of jobs would be required as construction.

- 6.273 It is estimated that about 45% of construction staff (192 jobs per annum) could be sourced from the local area (taken within a 60 minute travel time). The remaining 55% of construction staff would be likely to reside outside of the construction area, with the larger proportion of jobs taken by skilled solar PV professions owing to the scarcity of solar development within local areas.
- 6.274 During construction, it is intended that a Local Skills and Employment Plan would be implemented, the purpose of which would be to promote employment and training opportunities associated with the construction of the proposal.
- 6.275 In addition, measures unrelated to planning would include a Community Benefit Fund Structure document including a Skills and Education Contribution to potentially enhance the effects arising from the temporary employment generation and mitigate against the lost opportunity in agricultural employment.
- 6.276 It is not clear how the training provided, and experience gained could be transferred to other projects and vice versa, ultimately contributing to the creation of a sustainable, local workforce and not encouraging displacement or shortages in certain skills.
- 6.277 A Community Liaison Group would be established to provide the local community with a forum for discussion.

Adequacy of application/DCO

- 6.278 The proposal is not considered to lead to significant socio-economic effects, such that it would warrant a specific objection on these grounds. The proposal would lead to some moderate, beneficial effect on the local economy during construction.
- 6.279 Should the Development Consent Order be granted, CCC understands that the discharge and monitoring of planning requirements (conditions) will fall to the Host Authorities and other relevant statutory undertakers. are adhered to and managed throughout the lifetime of the development, particularly with regard to such matters including but not limited to vegetation management and effect on residential amenity.
- 6.280 CCC asks that consideration is given to using the Community Liaison Group as a means of responding to day to day queries and monitoring the implementation and management of the site throughout its lifetime.
- 6.281 No objections are raised to the proposed requirements in principle, although these will continue to be reviewed as part of discussions on the Statement of Common Ground (SoCG).

Other matters

Human Health

6.282 The human health aspects associated with air quality, noise and ground conditions are covered within the ES and consideration of those has taken place in the preceding paragraphs.

6.283 CCC notes that other health issues such as Electric and Magnetic Fields (EMF) have been considered in the Environmental Statement. Grid connection cables are proposed to be underground, therefore removing the potential sources of EMF such that there is not expected to present an issue for human health.

6.284 CCC will be guided by the comments of other relevant consultees/stakeholders on this matter.

Climate Change

6.285 The ES states that the operation of the scheme would result in significant, major beneficial effects on the climate (specifically greenhouse gas emissions) due to the nature of the scheme being for renewable energy. Renewable energy generation during the first year of operation is estimated to be 356, 475 MW and a total energy generation figure of around 13, 076, 218 MW over the total 40 year scheme lifetime.

6.286 CCC recognises that solar energy development can help meet targets for reducing carbon emissions. However, the positive impact in reducing carbon emissions must be balanced against the environmental impacts of the proposal.

6.287 CCC supports the development of solar energy development in principle provided that there are no significant adverse environmental impacts that cannot be appropriately managed and/or mitigated through the Development Consent Order (DCO) process.

Major accidents and disasters

6.288 Major accidents and disasters have the potential to lead to moderate or major adverse effects. The ES includes the submission of flood modelling, the identification of mitigation measures for glint and glare, and the production of a battery safety management plan.

6.289 Taken at face value, CCC raises no objection in principle to the proposed arrangements in relation to the above. However, CCC is content to be guided by the views of other stakeholders and considers that the final decision as to the acceptability of the proposal, will need to be made by the Planning Inspectorate and Secretary of State as part of the decision making process.

Telecommunications, Television Reception and Utilities

- 6.290 There is potential for utilities to be impacted during the construction phase through possible short-term damage to services during excavation and engineering operations. Necessary precautionary measures include the mapping of all utilities and infrastructure. The impact upon services will be considered separately to the planning considerations under the DCO and will be subject to independent agreement secured from the relevant service providers.
- 6.291 The construction environmental management plan (CEMP) sets out the full details of measures to be adopted during the construction phase.
- 6.292 No objections are raised to the proposed requirements in principle, although these will continue to be reviewed as part of discussions on the Statement of Common Ground (SoCG).

Minerals and Waste

- 6.293 The Essex and Southend on Sea Waste Local Plan (2017) sets out further detailed policies and guidance regarding the re-use and recycling of materials on sites.
- 6.294 In line with the Making Places Supplementary Planning Document (SPD), CCC encourages all developers to register with the Considerate Constructors scheme to promote respect for the community, ensure safe building sites, and responsible site management.
- 6.295 Matters including refuse and recycling would be set out within the Construction Environmental Management Plan (CEMP) and the construction resource management plan (CRMP).
- 6.296 CCC will be guided by Essex County Council on this matter, as they are the minerals and waste authority covering the proposal site.

Fear of Crime

- 6.297 The proposal has potential to affect fear of crime. The siting of 3 metre high solar arrays, plus mitigation in close proximity to long and uninterrupted channels of footpaths has potential to create a tunnelling effect, harmful to the user experience of the Public Rights of Way.
- 6.298 CCC is aware that discussions have been held with Essex Police to ensure that the proposals 'Design Out Crime' and provide safe access along the Public Rights of Way and any other areas that may be affected by the proposal.
- 6.299 CCC considers that concerns could be adequately addressed through the use of appropriate mitigation, including those set out in the Outline Landscape and Ecological Management Plan.

Adequacy of application/DCO

6.300 Overall, the proposal would result in a significant major beneficial effect that would deliver substantive public benefits through reducing greenhouse gas emissions.

6.301 Subject to appropriate requirements (conditions), the proposal would not lead to a significant effect upon human health, major accidents and disasters, telecommunications and fear of crime. Any significant effect upon Minerals and waste will be a matter for ECC Minerals and Waste Planning and would need to be balanced against the wider environmental benefits of the proposal.

DCO Obligations and impact upon the local authority's area

6.302 Chelmsford City Council will continue to work with Longfield Solar Energy Farm limited and the Host Authorities to agree Obligations and Requirements (Conditions) as part of the Statement of Common Ground.

7. Conclusions

7.1 There is a recognised need and support for renewable energy technology through National and Local Planning policy and this development would contribute towards the targets set for the UK's greenhouse gas emission reduction and increasing the country's energy supply for renewable sources.

7.2 The assessment of renewable energy proposals requires the impacts to be considered in the context of the strong "in principle" policy support given the Governments conclusion that there is a pressing need to deliver renewable energy generation.

7.3 The proposal would deliver 356,475 MW of energy a year which would provide a valuable contribution to cutting greenhouse gas emissions. This is given significant weight in favour of the proposal.

7.4 The proposal is not considered to lead to significant adverse harm that cannot be mitigated, such that it would warrant a specific objection from CCC.

7.5 The proposal would have an adverse impact on the surrounding landscape both visually and with regard to landscape character. However, predicted landscape affects arising from the proposed development, which are nor permanent, are acceptable on balance when weighing up the overall benefits of the proposal and can be overcome by the proposed mitigation.

7.6 The proposal would have a low level of less than substantial harm on heritage assets. Landscaping would partly mitigate the harm, but a very low level of harm would remain. This harm, in the context of public benefits delivered by the proposal with regard to increasing the country's energy supply for renewable sources, would not amount to a reason for objection on these grounds.

7.7 The proposal would not have or is expected to have a harmful adverse impact on ecology, residential amenity, highway safety or flood risk, subject to controls recommended by planning requirements (conditions).

7.8 The main benefit arising of the scheme is the contribution to the production of renewable energy and consequential reduction in CO2 emissions. These benefits are afforded substantial weight.

7.9 For the reasons given above and having regard to all other matters raised it is concluded that the proposed development is in accordance with the adopted Local Plan Policies and the Adopted Solar Farm Supplementary Planning Document.

7.10 Chelmsford City Council therefore raises no objections in principle to the proposal.

7.11 Chelmsford City Council will continue to engage with the applicants and further comments will be made throughout the examination of the proposal.

Appendices:

Appendix one:

Wynne Williams Associates: Longfield Solar Farm Position Statement on Landscape and Visual Impact 2022_07-14