Synchronous Condenser Land off Leys Lane Mellis Road Yaxley

Landscape and Visual Apprasial



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Landscape and Visual Appraisal

1 Introduction

This report presents the findings of a Landscape and Visual Appraisal (LVA) undertaken to support a full planning application for the construction of synchronous condensers on land off Leys Lane, Yaxley, Eye, Suffolk.

The appraisal was commissioned by ITP Energised, on behalf of Conrad Power Limited, in May 2022 and was undertaken by DRaW (UK) Limited, a registered practice of the Landscape Institute.

The aims of the LVA are to:

- assess the context of the site including planning policy relevant to landscape or visual issues;
- assess how the proposed development may affect the character of the landscape and views from surrounding areas; and
- identify appropriate mitigation measures to minimise any potential adverse landscape or visual effects, if required.

1.1 Appraisal Methodology

The methodology for the appraisal is based on 'Guidelines for Landscape and Visual Impact Assessment', Third Edition, 2013 (GLVIA3) produced by the Landscape Institute with the Institute of Environmental Management and Assessment.

It should be noted that in accordance with GLVIA3 there are differences between landscape and visual effects:

Landscape Effects relate to changes to the landscape as a resource. Taking into account its physical attributes, aesthetic/perceptual qualities and amenity value, which collectively define the character of an area.

Visual Effects relate to changes in views and visual amenity experienced by people, including inhabitants, workers, or visitors to recreational /tourist sites.



1.2 Study Area

The study area for the landscape and visual appraisal has been informed by computer-generated zone of theoretical visibility mapping, limited to a distance of 1.5 kilometre (km) from the site boundary. It is considered that for a compact development of the type and size proposed, combined with screening afforded by surrounding vegetation, there would be minimal landscape or visual effects beyond this distance.

1.3 Site Location

The site is situated on agricultural land between Mellis and Eye, approximately 5 kilometres (km) south of Diss town centre and 800m north of Yaxley. (The approximate grid reference is E611853, N274954). The A140 trunk road passes 600m to the east and the Diss to Stowmarket railway line passes 1,500m to the west.

Figure 1 shows the approximate site location and Figure 2 shows the general site context.

Figure 1: Site Location

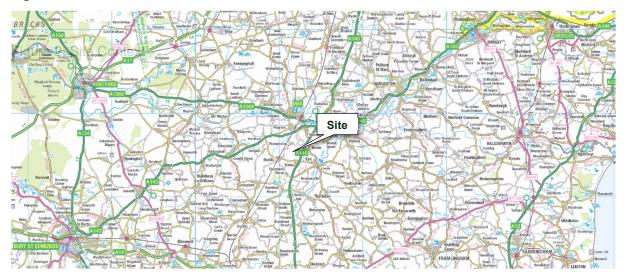


Figure 2: Site Context





The Proposed Development

The proposed development comprises the construction and operation of Synchronous Condensers (SCs) with ancillary works including access, parking, landscaping and grid connection on land off Leys Lane adjoining the National Grid Yaxley substation, which is currently under construction.

Access to the site will utilise the road currently being constructed between Leys Lane and Yaxley Substation.

The application site covers an area of approximately 5.1 ha, including the access route from the A140, which has already been constructed as part of the early works for the neighbouring Yaxley substation site. This is a temporary construction road for all construction related traffic including delivery of materials, equipment and staff – for both sites. It will be decommissioned once both works are completed.

The site area excluding the temporary access route covers an area of 4.0 ha.

Within the site boundary a secure compound would contain two 13.7 m high synchronous generator buildings, ancillary buildings/ equipment, parking and step up transformers at the western end. The compound would cover an area of approximately 1.68 ha and would be enclosed by a 2.4 m high steel palisade fence.

The proposals include an integral landscape scheme to help assimilate the development with its surroundings and achieve a net gain in biodiversity. The proposed planting includes native woodland, species rich hedgerows and wildflower seeding (Refer Section 9 Landscape Mitigation).

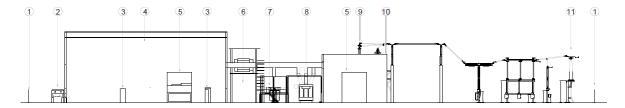
Figure 3 shows the proposed site layout and Figure 4 shows an indicative cross-section. A detailed description of the development and scheme drawings are provided in the planning submission.



Figure 3: Proposed Site Layout (not to scale)



Figure 4: Indicative Cross Section (not to scale)



2 Planning Context

The determining authority is Mid Suffolk District Council. The adopted development plan includes:

- saved policies from the Mid Suffolk Local Plan adopted 1998;
- the Mid Suffolk Core Strategy adopted in September 2008; and
- the Core Strategy Focused Review adopted in December 2012.

Policies relevant to landscape and visual matters are set out below:

Policy CS 2 Development in the Countryside

Policy CS 2 States: "Development in the Countryside and Countryside Villages In the countryside development will be restricted to defined categories in accordance with other Core Strategy policies.

These will include:

- development by statutory undertakers or public utility providers
- renewable energy projects"

Policy CS 3 Reduce contributions to Climate Change

Policy CS3 States: "The Council will promote and encourage the appropriate development of standalone Renewable Energy schemes to assist in achieving the Regional Spatial Strategy's targets"

Policy CS5 Mid Suffolk's Environment

Policy CS5 States: "All development will maintain and enhance the environment, including the historic environment, and retain the local distinctiveness of the area.

Landscape: The Council will protect and conserve landscape qualities taking into account the natural environment and the historical dimension of the landscape as a whole rather than concentrating solely on selected areas, protecting the district's most important components and encourage development that is consistent with conserving its overall character".

Policy CL3 - Major Utility Installations and Power Lines in the Countryside

Policy CS3 States: "New Major Installations for Utilities and Power Lines Exceeding 33kv Should Be Carefully Sited To Ensure Minimal Intrusion In The Landscape. The Feasibility of Undergrounding Electricity Lines will be regarded as a material consideration".



Policy CL11 - Retaining high quality agricultural land

Policy CL11 States: "The District Planning authority will Encourage the conservation of agricultural land. Particular protection will be Afforded to the 'Best and Most Versatile Agricultural Land' (Namely Grades 1, 2 And 3a of Maff's Agricultural Land Classification)".

Emerging Joint Local Plan with Babergh & Mid Suffolk

A joint local plan with Babergh & Mid Suffolk is currently being prepared. (BMSDC Joint Local Plan)

MSDC advise (June 2022) "policies are not currently sufficiently advanced as to be given weight at this time. Nevertheless, as the Plan emerges and undergoes the stages of consultation the weight given to these policies will increase and may affect the considerations outlined within the pre application advice".

3 Pre-Application Consultation

Pre-Application Enquiry DC/22/01844

Pre-application response received from Mid Suffolk District Coucil highlighted the following key constraints relating to the proposed development:

- "The site is located in the countryside in a fairly open landscape setting."
- There are residential properties nearby.
- Leys Lane is a narrow, single track highway that is also a public right of way.
- There are no listed buildings within the site but there are designated and undesignated assets within the wider landscape and the site has the potential for below ground assets.
- The site lies within Flood Zone 1
- The application site lies within the impact risk zone of the SSSIs Gypsy Camp Meadows.
- There are recorded priority species within the locality.
- The land is grade 3 agricultural land".

In relation to Landscape and visual matters the pre-application advice states:

"The site is located in an area of generally open, elevated landscape with direct views from public highways and the rights of way network. The proposal will have an impact on the character and appearance of the area and the application documents should address this issue, together with the cumulative impact of any other relevant development".

Under the heading 'Residential Amenity' it identified dwellings to the north of the site and within the main area of Yaxley village that may be affected by the proposed development.

The advice concluded:

"Planning policy is generally supportive of appropriate renewable energy associated development that supports the government's objectives, including net zero and ongoing energy security, providing the impacts of the development are or can be made acceptable.

In this instance there are a number of likely impacts that would need to be addressed and demonstrated in any application submission. There is particular concern regarding <u>visual impact</u>, noise and <u>residential amenity</u> and highways issues. An application for planning permission will be refused if it cannot be demonstrated, to the satisfaction of the Local Planning Authority, that these impacts of the development are or can be made acceptable".



4 Sensitive Receptors

Sensitive receptors are shown on Drawing 01 (Appendix A).

There are no statutory designations or protected landscapes within the vicinity of the site. The site is not within a National Park, AONB, or Green Belt.

Land around Mellis Green approximately 1.1 km west of the site is designated in the Mid Suffolk Local Plan as an area of 'Special Landscape Value'.

Designated Heritage Assets

The are no World Heritage Sites or Scheduled Monuments, or Historic Parks and Gardens within the study area.

The site itself is not within a Conservation Area, although the following Conservation Areas are within, or partially within the study area:

- Mellis Conservation Area, approximately 1.0km west of the site; and
- Thrandeston Conservation Area, approximately 1.3 km north of the site.

Listed Buildings within the study area include the Grade 1 Listed Church of St Margaret, in Thrandeston to the north of the study area, and the Grade II* Yaxley Manor House in Mellis Green approximately 1.0km to the west. There are no listed buildings within 500m of the site.

Residential Properties

The main areas of habitation are Thrandeston to the north Yaxley to the south and Mellis Green to the west. The landscape within the vicinity of the site is sparsely populated. The closest properties to the site are:

- One detached and a pair of semi-detached properties at 'The Leys' approximately 200 to 250m north west, (on land within the same ownership as the application site);
- Residential properties along Mellis Road (over 450m south of the site) including include Vine Farm,
 Chapel Farm and several Grade II listed buildings, and
- Two detached properties at Boswold Hall (Grade II Listed) approximately 800m northeast of the site.

Public Rights of Way

There are no public rights of way within the site, although there are a number within the study area, including:

- Yaxley BR8 southern end of the route adjoins the north east corner of the site and continues north where it joins Thrandeston BR13 and is approximately 1.3km in length.
- Eye FP15 route passes through Eye Airfield Industrial Estate and follows a short section of the A140, approximately 950m east of the site.
- Yaxley BR4 runs north-south approximately 670m east of the site and is approximately 1.1km in length. The bridleway follows the route of Judas Lane to the south and continues along Green Lane (Thrandeston BR11) to the north, eventually linking with NCN Route 30.
- Thrandeston FP9 approximately 700m north of the site. The route links to Thrandeston BR13 to the east and Thrandeston FP10 to the west.

Recreational Trails

National Cycle Route Route 30 - a long distance cycle route passes through the western edge of the study area and along Mellis road, approximately 500m from the site at its closest point.



5 Landscape Character Assessment

The following publications describe and evaluate landscape character at a national and regional level:

5.1 National Character Area NCA83: South Norfolk and High Suffolk Claylands

At a national level the site lies within National Character Area 15 which is described as:

"The whole of the South Norfolk and High Suffolk Claylands NCA is a plateau, dissected by shallow, intimate valleys that are mostly small in scale, especially those fringing the eastern boundary. The streams and rivers that drain the plateau meander slowly between low banks lush with riparian vegetation. The area has little variation in height, although the River Waveney, which forms the Norfolk–Suffolk boundary, and its tributaries have locally pronounced effects.

The area is predominantly agricultural with arable farming dominating, particularly cereals, sugar beet and oilseed rape, whose bright yellow flowers make a dramatic visual statement across the plateau in early summer. Intensive pig and poultry rearing takes place in large units, especially in the areas of lighter soils around the edges of the plateau and sometimes on redundant airfields. There is a strong contrast between the treed small-scale pastures and wetland vegetation in the shallow river valleys, such as along the Deben, and the large arable, ditchedged fields of the central plateau, which have infrequent hedgerow boundaries.

This is especially evident south of Wymondham and north-west of Framlingham which has seen some extensive field amalgamation. There are, though, still some historically significant holding boundaries and areas of small and long-enclosed fields which often have wide and high species-rich hedges, with closely spaced hedgerow oaks, which are indicative of great age. This former unchanged landscape quality is retained in an area to the south-east of Bungay, known as 'The Saints'. There are no major estates and only a scattering of medium-sized ones. It is an area of modest landholdings, suggestive of a distant history of winning a patch of farmland from the primeval oak forest.

Key Characteristics

- Large plateau area of chalky glacial till that is generally flat or only gently undulating, but can be locally concave.
- Views are frequently open, only sometimes confined by hedges and trees, with some woodland present. The small valleys support quite confined landscapes with intimate views.
- Scattered areas of ancient woodland, game copses, shelterbelts, valley floor plantation and carr woodland as well as hedgerow trees provide a treed landscape character, despite much boundary loss.
- A mix of remnant medieval ancient countryside, some of it with a decidedly coaxial character, although irregular field patterns and large modern amalgamated open fields dominate.
- Sinuous field boundaries are formed by deep ditches, some with hedgerows and hedgerow trees.
- Extensive areas of arable land dominated by cereals with breakcropping of sugar beet and oilseed rape, and some pastures along valley floors. Intensive pig and poultry production is common.
- Remnant parkland, ancient woodlands, commons and greens with a diverse grassland flora. River valleys support areas of ecologically rich unenclosed 'semi-wild' fenland and remnant dry heaths dominated by poor dry grassland.
- Large number of isolated moated timber-framed farmhouses and farm buildings with steeply pitched clay-tiled or long-straw thatched roofs. Little flint, some brick (especially in towns).
- A dispersed settlement pattern of small nucleated market towns with architectural variety and colour, loosely clustered villages and scattered hamlets. Settlement is often focused around large medieval greens. Many of the market towns have modern extensions.



- Some major transport links including the Norwich to London main rail line but infrastructure routes are predominantly an extensive network of narrow lanes and byroads.
- The Mendlesham and Tacolneston masts (tall communications masts), wind turbines at Eye airfield and high-tension overhead power lines are prominent modern features in the landscape

NCA 83 also includes two stated environmental objectives (SOE's) for the region, which are relevant to the proposed development:

- SEO 1: Maintain and enhance the rural character of the landscape and the contrast between the arable plateau and pastoral river valleys by maintaining agricultural productivity and encouraging sustainable land management practices that protect and enhance the landscape, geodiversity and biodiversity assets while benefiting water quality and water availability, as well as the rural sense of place and of tranquillity.
- SEO 4: Protect and enhance the area's ancient semi-natural woodlands, copses, river valley plantations and ancient boundaries including hedgerows and hedgerow trees, through the management of existing and the creation of new woods and hedgerows to benefit biodiversity, landscape character and habitat connectivity, and for the benefits to soil erosion reduction, water infiltration and quality, timber provision and carbon storage.

5.2 Suffolk Landscape Character Assessment

The study area encompasses three Landscape Character Areas (LCAs) defined in the Suffolk Landscape Character Assessment (Suffolk County Council 2010):

- Rolling Valley Farmlands & Furze LCA, which encompasses Thansden to the north;
- Ancient Plateau Claylands LCA, which encompasses an extensive area west of Eye including the majority of the study area and the application site; and
- Rolling Valley Claylands LCA, which encompasses land to the east of Yaxley

The boundaries of the LCAs are shown on Drawing 01 (Appendix A).

ZTV analysis (Refer Section 7) indicates that there would be no intervisibility between the proposed development and Rolling Valley Farmlands & Furze, or the Rolling Valley Claylands, therefore these LCAs have been excluded from further analysis.

Ancient Plateau Claylands LCA

The key characteristics of Ancient Plateau Claylands LCA in which the site is located include the following descriptors:

- Flat or gently rolling arable landscape of clay soils dissected by small river valleys
- Field pattern of ancient enclosure random patterns in the south but often co-axial in the north. Small patches of straight-edged fields associated with the late enclosure of woods and greens
- Dispersed settlement pattern of loosely clustered villages, hamlets and isolated farmsteads of medieval origin
- Villages often associated with medieval greens or tyes
- Scattered ancient woodland parcels containing a mix of oak, lime, cherry, hazel, hornbeam, ash and holly
- Hedges of hawthorn and elm with oak, ash and field maple as hedgerow trees.
- Substantial open areas created for WWII airfields and by 20th century agricultural changes
- Network of winding lanes and paths often associated with hedges create visual intimacy



Under the heading 'Development Management' the LCA guidance includes the following in relation to the siting of 'Large scale agricultural buildings in open countryside', whilst the proposed development is not agricultural the structures would be of a similar size and construction to many modern farm sheds and therefore guidance on mitigating the effects of new buildings in the landscape is relevant.

"The right choice of siting, form, orientation and colour of these buildings can make a considerable contribution to mitigating their impact. There are also opportunities to design locally appropriate planting schemes to reduce the visual impact further.

Specifically, the siting of buildings should relate to an existing cluster of buildings whenever possible. Usually, although not in all cases, some shade of the colour green is preferred as this will integrate well with vegetation. The correct orientation of the building can also significantly change the visual impact of the development, and this consideration should always be explored.

In addition to new planting to mitigate the impact of a development, the option to modify the management of existing hedgerows should also be explored. There are often significant opportunities to retain these boundary features at a specific height. Furthermore, the location of the development in relation to existing trees that act either as screening or as a backdrop should be carefully considered. The planning authority should ensure that these trees are retained for the lifetime of the development.

New planting should be designed to integrate the development into the character of this landscape, and may consist of both backdrop and screening planting. Although there should be a preference for native tree species other options should not be overlooked, especially if they can act as nurse trees, or are likely to prove successful in difficult conditions.

The care and maintenance of the planting should be made a condition of these developments. In many cases the landscape impact of these projects is only acceptable if it is mitigated by effective planting. The applicant should therefore provide a detailed scheme of planting and aftercare, which can form the basis of a condition. Furthermore, depending on the risks to be controlled, the planning authority may need to consider a 106 agreement to secure the landscaping and design requirements for an extended period".

5.3 Tranquillity

Countryside Protection for Rural England (CPRE) Map of Tranquillity (2006) indicates that the site is located within an area "disturbed by urban development, major infrastructure projects and other noise and visual intrusion" (refer yellow hatch Figure 5).

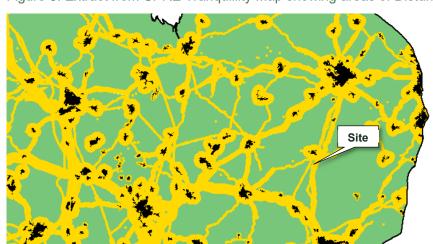


Figure 5: Extract from CPRE Tranquillity Map showing areas of Disturbance



5.4 Dark Skies

The site is not located within a 'Dark Skies Park', although the CPRE Light Pollution and Dark Skies Map indicates that the site lies within a relatively dark area (Refer Figure 6).

The Mid Suffolk Business Park East of the site is a major source of illumination, although the A140 which is closer to the site is not illuminated.

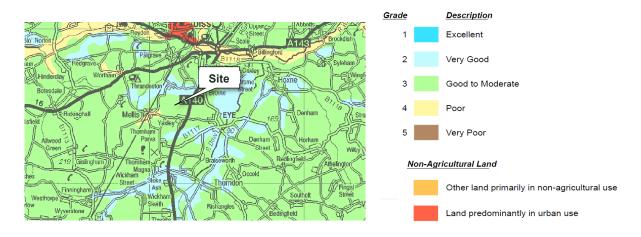
Figure 6: Extract from CPRE England's Light Pollution and Dark Skies Map



5.5 Agricultural Land Classification

The 1:250 000 Seies Agricultural Land Classification map (East Region) indicates that the site is located within 'Good to Moderate' (Grade 3) land, although no distinction is made between Grades 3a 'Best and most versatile Land' and lower grades 3b and 3c (Refer Figure 7).

Figure 7: Extract from 1:250 000 Series Agricultural Land Classification Map





5.6 The Site and its Environs

Land use

The land within and around the site comprises farmland with a patchwork of large flat rectangular fields interspersed with smaller, less geometric fields, enclosed by mature overgrown hedgerows. Hedges tend to be in poor condition with frequent gaps allowing intermittent long-distance views across the flat arable landscape.

A row of overhead transmission line towers (400 kV line), which cut through the study area from north to south, are prominent features, especially where the towers are located in the middle of fields, away from hedgerows or copses.

Apart from single track lanes leading to isolated farmsteads (including Leys Lane and Judas Lane) there are very few roads within on near the site.

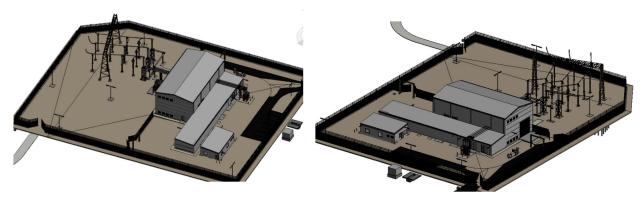
Further afield, the study area is bounded by larger roads, including the A140 to the east and Mellis Road to the south. The Diss to Stowmarket railway line runs along the western edge of the study area.

To the east of the A140 the former Eye Airfield, now Mid Suffolk Business Park, contains a number of large scale industrial/ commercial premises and wind turbines, which are prominent features on the skyline beyond the study area boundary.

The landscape adjacent to the site is currently undergoing significant change due to the construction of the Yaxley Substation, (Refer DC/19/02267). The substation will connect the power station, located on the former Eye airfield, with the 400kv overhead transmission line west of the site.

The boundary of the approved substation is shown on Drawing 01 (Appendix A). Figure 8 (below) illustrates the general appearance of the substation. A compound, enclosed by a 2.4m high palisade fence, includes a main building (approximately 10.5 m high) along with external electrical equipment and pylon that will facilitate a new connection to the existing 400kV overhead transmission line.

Figure 8: Illustrative views of the substation currently under construction, located immediately west of the application site



The proposed synchronous condenser development would be situated immediately east of the new substation and would share the same access from Leys Lane, thus minimising further land take. (The temporary construction route connecting the site to the A140 will be removed at the end of the construction period)



Landform

Land within the study area is essentially flat with levels ranging from 50m AOD in the south towards Yaxley and 40m AOD in the north towards Thrandeston.

The site levels range from 49m AOD in the southeast corner to 45m AOD in the northwest corner.

The flatness of the landscape accentuates the prominence of the transmission line towers that cross the study area at approximately 40 to 50m in height.

Vegetation

Within the study area vegetation cover is generally restricted to hedgerows and scattered trees along field boundaries and roads. Apart from a plantation at Mellis, there are no substantial woodlands within the locality.

Despite the general sparsity of trees and frequent gaps in the hedgerows, the landscape appears, from eyelevel level, to be more densely vegetated than it is in reality. This is due to the flat landscape which allows views of multiple, overlapping field boundaries from most locations.

There are no trees or hedgerows within the site, although there are native hedgerows adjacent to the southern and eastern boundaries which are outside the application site.

Water Courses

There are no notable watercourse or water bodies within the site or the surrounding area. There are occasional ponds in the northern part of the study area and adjacent to the A140. These appear to be manmade fishing ponds or agricultural irrigation reservoirs and are relatively minor features within the landscape.

Recreation and Amenity

The site is not publicly accessible and is not a recreational resource. There are no tourist attractions or visitor destinations in the immediate vicinity, although Leys Lane and the connecting bridleway to Thrandeston are used by local residents for horse riding, cycling and walking. Yaxley Allotments are located next to a fishing pond at the northern end of Old Norwich Road, approximately 500m east of the site and approximately 10m from the temporary access road.

Landscape Quality

In a regional context, the landscape is not unusual or rare and there are no notable landmarks or geographical features within the study area. The landscape within and around the site is reasonably attractive and, apart from the overhead powerline and certain detracting features visible to the east, it is relatively rural in character despite proximity to urban areas, the landscape also has a sense of relative remoteness and tranquillity.

6 Potential Landscape Effects

The development is not within Green Belt or a designated landscape and would not affect the setting of the Special Landscape Area approximately 1.0 km southwest of the site.

The proposals would result in the permanent loss of approximately 4.0 ha of 'Good to Moderate' agricultural land and the temporary loss of a further 1.1 ha which would be reinstated when the access route is removed at the end of the construction phase. By sharing the access route for the adjacent substation, the overall land take will be minimised.



There would be no loss of trees or hedgerows as a result of the proposed development. By contrast the proposals would provide a notable increase in the amount of tree and woodland cover compared to existing, especially seen in conjunction with planting associated with the adjacent substation. (Refer Section 9 Landscape Mitigation).

The development would be constructed 'at grade', with relatively little excavation required. Stripped topsoil could be used to form low mounds, to increase the height and apparent maturity of proposed woodland planting during the establishment period.

No watercourses or water bodies would be affected.

There would be no loss of recreational land and no footpaths would be diverted. There would be a localised adverse effect on the setting of the adjacent track/bridleway (Leys Lane), particularly during the construction period, when construction traffic would cross over Leys Lane to access the site.

The adverse effects of the setting of Leys Lane, and the approach to properties at the end of Leys Lane (The Leys) would be mostly confined to the section of road immediately adjacent to the development, where currently the lack of roadside vegetation allows open views across the field in which the site is located.

The site is not within a 'dark sky', or 'tranquil area'. In isolation, the proposed development would increase the amount of activity and disturbance in the relatively remote rural landscape and introduce lighting to an area which is currently unlit. However the substation and grid connection, currently being constructed in advance of the proposed development, will introduce external lighting and increase local activity. Any additional changes to the level of disturbance or degree of illumination resulting from the proposed development is likely to be minimal.

The approved substation (under construction) will introduce a relatively large-scale development, uncharacteristic of the rural landscape. It will also be the relatively prominent from Leys Lane. It is anticipated that throughout the construction period the substation will gradually reduce the rural character and quality of the landscape and will increase its capacity to accommodate further development of the type proposed.

The proposals would introduce additional built-form into the rural landscape west of the A140 which would inevitably reduce its openness compared to existing. However, in relation to the approved substation adjacent to the site and the electrical connection to the existing overhead transmission line, the proposed development (being of similar appearance to the substation) would not be 'out of keeping' and would have comparatively little additional impact upon local landscape character.

Overall, it is predicted that upon completion the Yaxley substation and grid connection will introduce further National Grid infrastructure and activity into a rural landscape. This will inevitably reduce the sensitivity of the area and its capacity to accommodate further development of similar type and appearance.

The proposed development will further increase the amount of built-form and would contribute to a further reduction in the openness of the landscape, although the adverse effects would be significantly reduced by the presence of the 400kv powerline, grid connection and substation. Furthermore due to the frequency of hedgerows around the site any adverse effects would be localised. It is predicated that changes to the character, composition and quality of the wider landscape and any affects on the 'Ancient Plateau Claylands LCA' would be minimal.



7 Visual Appraisal

7.1 Zone of Theoretical Visibility

Zone of Theoretical Visibility mapping (Drawing 02) is based on the tallest proposed structure (i.e. the 13.7 m high Condenser Building) and takes into account screening afforded by topography, woodland and structures over 4m high. It does not take into account screening afforded by proposed planting within the site, or that associated with the adjacent substation development, as shown on Drawing 03.

Drawing 02 indicates that views of the proposed development would generally be limited to the open farmland around the site, bounded by the A140 to the east, Mellis Road to the south and Judas Lane to the west. The northern extent of the ZTV is less well defined and varies according to the frequency of hedgerows. Where gaps in hedgerows align, more distant views towards Thrandeston are possible, however, there are very few publicly accessible locations or residential properties within this area.

7.2 Viewpoint Assessment

Based on the ZTV analysis, 10 accessible locations were identified for the visual assessment, located at varying distances and directions from the site. The following descriptions of the existing and proposed views should be read in conjunction with the viewpoint photography, Appendix B. Viewpoint locations are shown on Drawing 02, Appendix A.

The photographs have been taken and presented in accordance with TGN 06/19 Visual Representation of Development Proposals produced by the Landscape Institute (Sept 2019). Each photograph includes the photograph parameters, including elevation, field of view and distance/orientation to the site.

Viewpoint 1: Levs Lane, south of the site

Existing View

The view is experienced by road users and walkers heading in a northerly direction along Leys Lane, a single track road from Yaxley to The Leys. Lack of roadside vegetation allows views across adjacent agricultural land to the north and west, although long distance views are obstructed by hedgerows and scattered trees along intervening field boundaries. The transmission line towers, including the new connection tower, are prominent features on the skyline. The upper part of approved substation, currently under construction, will also be theoretically visible from this location.

Proposed View

The proposed development would be substantially screened by hedgerows and scattered trees along intervening field boundaries. The roof and upper parts of the synchronous condenser buildings will be visible above the existing vegetation, especially during the winter months. However, in relation to the adjacent substation and grid connection structures, the proposals would barley be perceptible to the casual observer.

Viewpoint 2: Yaxley Bridleway 8, north of site

Existing View

The view is experienced by walkers heading in a southerly direction along bridleway (Yaxley BR8), north of Leys Lane. A site compound, drilling rig and recently constructed connection tower are visible beyond the large arable field in the foreground. Large trees on the skyline beyond the site reduce the prominence of current substation construction works.



Proposed View

The proposed development would be a prominent feature to the left of the current site compound (within the area delineated by the temporary security fencing). Due to the lack of intervening vegetation, the proposed development would be a prominent feature from this section of bridleway. Whilst the outline of the development would be 'softened' by mature trees beyond the site, it would remain prominent until proposed screen planting becomes fully established. The degree of visual change would be lessened by its proximity to the substation currently being constructed. It is likely that the proposed development will be perceived as an extension of an existing facility, rather than a new industrial feature in a rural setting.

Viewpoint 3: Mellis Road, south of Vine Farm

Existing View

The view across open fields is experienced by road users on Mallis Road and residents in Yaxley, approximately 540m south of the site. The drilling rig associated with the substation construction and transmission line towers (including the recently constructed grid connection tower) are prominent on the skyline. The substation construction compound and the neighbouring application site are both screened by hedgerows in the middle distance.

Proposed View

Where gaps between houses allow, the upper parts of the condenser building and transformer may be visible from Mellis Road and from properties on the northside of the road that orientate towards the site. The majority of the proposed development would be screened by intervening vegetation. ZTV analysis indicates that tops of the proposed buildings would be visible above hedgerows, however it is predicted that (in relation to the substation infrastructure) perceived changes to views would be negligible.

Viewpoint 4: Judas Lane, east of Yaxley Manor House

Existing View

The view is experienced by walkers using the permissive route along Judas Lane, which joins bridleway (Yaxley BR4 and Thrandeston BR11) further north along Green Lane. Looking east across flat agricultural land allows uninterrupted views of the existing transmission line towers, grid connection tower and associated electrical equipment (to be constructed the vicinity of the drilling rig visible in the photograph). The construction compound and the application site are screened by existing vegetation. Wind turbines and industrial buildings within Mid Suffolk Business Park are partially visible on the skyline, approximately 2 km from the viewpoint.

Proposed View

The proposed development will be visible from this location, although would be seen beyond the substation and grid connection infrastructure, which would be main focus of the view. The retained hedgerow will screen the lower part of the development and, over time, proposed planting around the substation and condenser buildings will provide further screening and assimilation with the surroundings. Overall, when construction of the substation is completed, the proposed development would make relatively little difference to the character, composition and quality of the view.

Viewpoint 5: Bridleway 11, Green Lane, east of Kiln Farm

Existing View

The view is experienced by walkers heading in either direction along Green Lane. The majority of the bridleway is flanked by trees and vegetation which obstruct views from the path. Where gaps in the vegetation allow there are intermittent views across the study area towards the Mid Suffolk Business Park, seen beyond the A140. Pylons and wind turbines are prominent detractors on the skyline.



Proposed View

The proposed development will be visible from this location, although seen beyond the substation and grid connection infrastructure, which would remain the focus of the view. Intervening hedgerows will screen the lower part of the development and, over time, the proposed panting around the substation and the condenser buildings will provide further screening and visual assimilation with the surroundings. The existing foreground hedge is likely to further screen the development as it matures. Overall, when the substation is completed, the proposed development would make relatively little difference to the character, composition and quality of the view.

Viewpoint 6: Thrandeston Footpath 9, north of site

Existing View

The view is experienced by walkers heading in a southerly direction along footpath 9, towards Boswold Hall.

Overhead transmission line towers are prominent components of the view. Southerly views are relatively open due to the limited amount of hedgerow. The substation construction compound and site access road are visible in the middle distance.

Proposed View

The proposed development would be visible and seen in conjunction with the substation and grid connection equipment. Due to a combination of viewing distance, prominence of overhead line towers and substation, the proposed development would have very little effect on the character or quality of the view. As it matures, proposed planting would aid landscape and visual assimilation of both developments within the surroundings.

Viewpoint 7: Thrandeston Footpath 10, north of site

Existing View

The view is experienced by walkers heading east-west along the footpath 10, south of Thrandeston. The site and adjacent construction compound are screened by trees and hedgerows in the middle distance, although the drilling rig (on the site of the proposed grid connection) is visible above existing vegetation. The transmission line towers detract from the view.

Proposed View

Drawing 02 indicates the development would be theoretically visible from this location although in reality it is predicted that the development and the neighbouring substation would be substantially screened by the trees and hedgerows north of the site. The effects of the proposed development on the character or quality of the view would be minimal, particularly during the summer months when vegetation is in leaf.

Viewpoint 8: Eye Footpath 15, east of site

Existing View

The view is experienced by walkers, road users and occupiers of commercial premises within the Oaksmere Business Park/ /Eye Airfield Industrial Estate. Views to the west are obscured by vegetation along the A140 and, in time, will be further screened by recent planting along the edge of the industrial estate. Looking in a westerly direction the transmission line towers (beyond the site) are visible on the skyline, although the site itself and the adjacent construction compound are obscured by mature trees.



Proposed View

Due to viewing distance and screening afforded by vegetation, neither the proposed development or the substation would be visible from the business park/industrial estate, consequently there would be no change to the existing view.

Viewpoint 9: A140, west of Eye Airfield Industrial Estate

Existing View

The view is experienced by walkers on the Eye Footpath 15 and motorists along the A140. In terms of receptor numbers this is potentially a key viewpoint in the study area, however, dense hedgerows along the western side of the A140 prevent any views across the open agricultural land to the west and the site is not visible from this location.

Proposed View

The proposed development would be screened by existing roadside vegetation. The proposals would not affect the setting of the A140 road corridor or the existing views.

Viewpoint 10: Old Norwich Road, west of Whitehouse Farm

Existing View

The view is experienced by road users and walkers on the Old Norwich Road. A hedgerow along the western side of the road limits views across arable fields towards the site. Occasional gaps in the hedgerow allow views to the west, although the site is screened by trees and hedgerows on intervening field boundaries. Transmission line towers are prominent on the horizon and detract from the view.

Proposed View

The proposed development would be partially visible above existing hedgerows. Due to the viewing distance, substation, existing line towers and large agricultural buildings to the south, perceived changes to the view resulting from the proposed development would be minimal.

8 Potential Visual Impacts

Zone of Theoretical Visibility

Field observations indicate the ZTV would be notably less extensive than Drawing 02 indicates. This is due to the frequency of low-level vegetation which is not included in the 3D model. It is predicted that proposed development would be mostly limited to receptors within 600m of the site. Beyond this distance the development would be substantially screened by intervening trees and hedgerows.

Summary of viewpoint assessment

The findings of the viewpoint assessment indicate that the only notable views of the development would be from parts of Leys Lane and bridleway (Yaxley BR8) to the north. The sections of the lane/bridleway nearest the site (represented by Viewpoints 1 and 2) indicate that the proposed synchronous condenser development would be prominent and potentially would have an urbanising effect on the setting of the lane/bridleway within the vicinity of the site, especially where gaps in hedgerows allow uninterrupted views. Perceived adverse effects of the proposed development would be reduced significantly by the presence of the substation and grid connection equipment which (when completed) is likely to become the focus in views and have an urbanising effect on local landscape character. In this context the proposed development would not be overly intrusive and, whilst it would further increase the prominence of power related development, it would not introduce a new or alien feature to local views.



Furthermore, establishment of proposed mitigation planting (including that associated with the approved substation) would provide effective screening and visual assimilation of the development within the landscape.

In terms of the other viewpoints the development would only be partially visible (particularly viewpoints VP4 and VP6) although due to increased distance and screening afforded by intervening vegetation predicted effects would be minor.

Residential assessment

Due the sparsity of residential properties in the locality and screening afforded by dense vegetation no properties would experience a significant loss of residential visual amenity, overshadowing, or loss of privacy.

The closest properties and potentially most susceptible to the effects of the development, are those located at The Leys, which lie approximately 200-250m northwest of the site.

The development would be screened from the main residence (a large two-storey detached house) by a group of mature trees immediately south. However, nearby semi-detached houses (nos 1 & 2 The Leys) are oriented towards the development and have more open southerly aspect and therefore more likely to experience some visual obstruction as a result of the proposals.

The development would have an urbanising effect on views compared to existing. Seen in context of the substation (currently being constructed approximately 170m south of these properties) perceived adverse effects would be reduced considerably.

Some screening would be afforded by proposed planting although it is unlikely that the development would be completely screened and therefore changes to the character of the view are likely to be long-term or permanent.

Views from the road network

With the exception of Leys Lane adjacent to the site, no notable adverse effects on views from the local road network have been identified. Existing glimpsed views towards the site from the A140, Mellis Road and Judas Lane already feature prominent power related infrastructure, including transmission line towers and substation. Perceived changes to views resulting from the proposed development would be negligible.

Views from heritage assets

No adverse effects are predicted to the visual setting of designated heritage assets, including Conservation Areas at Mellis Green and Thrandeston and the Listed buildings at Boswold Hall and Yaxley, all of which lie outside the zone of theoretical visibility.

The effects on the settings of undesignated or below ground heritage assets has not considered in this appraisal.

9 Proposed Mitigation Measures

The primary aim of the mitigation is to aid landscape and visual assimilation and screen the proposed development from the surrounding area, especially Leys Lane and the adjoining bridleway to the northeast.

Based on the findings of the LVA, and in relation to the pre-application advice the following mitigations measures are proposed:

- The buildings within the site would be painted a non-reflective recessive colour, to match the adjacent substation and where practical would follow the guidance for improving the setting of 'Large scale agricultural buildings in open countryside' as set out in 'Ancient Plateau Claylands LCA'.
- The security fence enclosing the site would be painted a dark, non-reflective recessive colour, to be agreed with MSDC.



- Approximately 0.84 ha of native woodland would be planted along the northern and eastern edges of the site. The proposed woodland would be planted at 1.5m centres (0.44 plants per m²). To increase its apparent height, especially during the establishment period, the trees and shrubs would be planted into a 1.5m high mound constructed from soils stripped from the site prior to construction.
- Approximately 565 m of native, species rich hedgerow would also be planted around the northern eastern southern edges of the site, providing further screening from Leys Lane and replicating local field enclosures. Hedgerows would comprise two double staggered rows of trees/shrubs planted at 250mm centres (7 plants per lin m).
- Wildflower meadow would be sown between the security fence and the application boundary. A 'general purpose meadow mix' (Emorsgate Em1, or similar) would be sown directly into subsoil, at the rate of 4gms per m². The meadow mix would contribute to a net gain in biodiversity compared to the existing situation.
- For operational reasons land in and around the condenser buildings and associated transformers would be sown with a slow growing, low maintenance grass seed mix, rather than a wildflower mix.

The planting proposals are shown on Drawing 03 (Appendix A).

Figure 9 lists the proposed plant species.

Figure 9: Planting Schedule

Species	V @ 1.5m centres (0.44 Plants po	Type/Size	%
Acer campestre	Field Maple	BR 1+1 /60-80	10
Alnus glutinosa	Alder	BR 1+1 /60-80	10
Betula pendula	Silver Birch	BR 1+1 /60-80	10
Corylus avellana	Hazel	BR 1+1 /60-80	10
Crataegus monogyna	Hawthorn	BR 1+1 /60-80	5
llex aquifolium	Holly	Container/2 ltr	5
Pinus sylvestris	Scots Pine	Container/2 ltr	10
Prunus avium	Wild Cherry	BR 1+1 /60-80	10
Quercus robur	Oak	BR 1+1 /60-80	15
Sorbus acuparia	Rowan	BR 1+1 /60-80	5
Salix caprea	Goat Willow	BR 1+1 /60-80	5
Tillia cordata	Small-leaved lime	BR 1+1 /60-80	5
		TOTAL	100

Native Species-rich Hedgerow Mix - NH @7 plants/m - 25cm centres, double staggered row					
Species	Common Name	Type/Size	%		
Acer campestre	Field maple	BR 1+1 /60-80	5		
Corylus avellana	Hazel	BR 1+1 /60-80	10		
Crataegus monogyna	Hawthorn	BR 1+1 /60-80	50		
llex aquifolium	Holly	Container/2 ltr	10		
Prunus spinosa	Blackthorn	BR 1+1 /60-80	20		
Rosa canina	Dog rose	BR 1+1 /60-80	5		
		TOTAL	100		

All seeding and planting would be maintained in a healthy, weed and litter free condition, in accordance with good horticultural practice. Any dead or dying plants or failed seed areas would be replaced to ensure the woodland achieves its primary purpose as an effective visual barrier.

Given the geographic location and availability of good quality topsoil it is envisaged that the native trees and shrubs proposed could grow up to 400mmm per year (a conservative estimate would be 300mm per year).



10 Response to Pre Application Advise

In response to the key issues raised by MSDC in the pre-application advice (Refer Section 3) a landscape and visual appraisal of the proposed development has been undertaken which confirmed that the proposed development in isolation, and in conjunction with the adjacent substation, would be relatively well screened from the surrounding area by frequent trees and hedgerows.

The appraisal identified potentially notable adverse effects to:

- the setting of Leys Lane and the connecting bridleway to the north, within the vicinity of the site, and
- views from two residential properties (Nos 1 and 2 Leys Lane), approximately 200m northwest of the site

In relation to the cumulative effects of the proposed development with the adjacent substation, both developments would introduce additional National Grid infrastructure and activity into a relatively rural landscape. However, due to their close proximity any adverse effects on the character of the landscape would be concentrated into a relatively small area with few receptors. Due to the frequency of surrounding hedgerows the effects would be limited to a distance of approximately 600m from the site, and would have minimal effects on the wider landscape, or 'Ancient Plateau Claylands LCA'.

Also by utilising the same temporary access route used for the construction of the substation would minimise the amount of land required to construct the synchronous condensers.

In response to the concluding comment in the pre-application advice:

"An application for planning permission will be refused if it cannot be demonstrated, to the satisfaction of the Local Planning Authority, that these impacts of the development are or can be made acceptable",

The extensive mitigation proposals described in Section 9 would in isolation, and in conjunction with the adjacent substation, mitigate the adverse effects on these local receptors.

As a result of the measures proposed and in conjunction with the extensive planting being implemented in association with the neighbouring substation and grid connection adverse effects would be temporary. In the long-term, as the planting becomes fully established, the impacts would be reduced to an acceptable level.

11 Compliance with Planning Policy

Planning policy, identified by MSDC as being relevant to the development and, or landscape and visual issues (Section 3) is considered in relation to the findings of the appraisal:

Compliance with Policy CS2

The core strategy lists development by statutory undertakers, public utility providers and renewable energy projects as acceptable land uses in the countryside therefore the proposal for the synchronous generator facility, which would be an integral part of the national grid network is fully compliant with Policy CS2.

Compliance with Policy CS 3 Reduce contributions to Climate Change

The development is classed as a renewable energy scheme, assisting in achieving the Regional Spatial Strategy's targets and is therefore fully compliant with Policy CS 3.

Compliance with Policy CS 5 Mid Suffolk's Environment

In considering the effects on landscape character, consideration has been given to the National Character Area NCA83: 'South Norfolk and High Suffolk Claylands' and the 'Ancient Plateau Claylands LCA' of the Suffolk Landscape Character Assessment. A key objective of both documents is to protect and enhance the woodland cover. The proposals would increase the amount of native woodland and hedgerows compared to existing, thus contributing to the objectives of the national and regional LCAs.



The development itself would not reflect the traditional building style or settlement patterns yet in relation to the extensive industrial and commercial development on the former Eye Airfield to the east and the existing national grid infrastructure proposals would not introduce a new or alien development/land use.

In terms of the historic context no notable effects are predicted on designated cultural heritage sites.

Due to the type and function of the development proposed it is unlikely to 'enhance the environment, or the local distinctiveness'. However, due to the frequency of the existing vegetation combined with proposed mitigation measures the adverse landscape and visual effects would be relatively localised and the wider landscape would be unaffected. Overall the proposals are considered to be neutral in relation to Policy CS5.

Compliance with Policy CL3 - Major Utility Installations and Power Lines in the Countryside

In relation to Policy CL3 the location of the synchronous generators is primarily determined by proximity to the 400 kV transmission line. By locating the development next to the proposed substation and line connection would concentrate disturbance into a singe location, thus minimising the potential impact on the wider landscape.

The development is located in a sparsely populated, relatively remote location, surrounded by frequent trees and hedgerows, which provide high levels of screening would aid assimilation of the development with its surroundings. It is considered the proposals are fully compliant with Policy CL3.

Compliance with Policy CL11 - Retaining high quality agricultural land

Based on the high level agricultural land classification map for the east of England it is not know known whether the farmland within the site is Grade 3a. More detailed agricultural land classification assessment would be required to determine whether the land was 'Best and Most Versatile', and therefore compliant with HLP Policy CL11.

12 Conclusion

Based on the findings of the LVA undertaken in accordance with current best practice guidelines, it is predicted that the proposals would not give rise to any significant adverse landscape or visual effects beyond a distance of 600 m from the site boundary. This is due to the low number of receptors and the high levels of screening afforded by surrounding trees and hedgerows.

The development site is located in countryside outside settlement boundaries. It is not subject to any statutory landscape designations and it is not within Green Belt and would not be visible from the Special Landscape Area west of the study area. In terms of the NPPF 2021, Paragraph 174 it is not a 'valued landscape' although it is reasonably attractive and is no doubt valued by local inhabitants who use the local paths.

A key consideration affecting the sensitivity of the landscape and its capacity to accommodate development of the type proposed, is the presence of the existing and approved national grid infrastructure, namely:

- The existing 400kV overhead transmission line and towers are prominent detractors, visible above the trees from most locations within the study area.
- An electrical substation, connection tower and associated infrastructure are currently being constructed on land immediately adjacent to the application site.

The presence of the existing/approved electrical infrastructure already reduces the rural character and quality of the local landscape, and therefore increases its capacity to accommodate further development of the same type.

Within this context, the proposed synchronous condenser development, which would be similar in appearance to the neighbouring development, would contribute to further urbanisation of the landscape, although it would not affect any new receptors not already affected by the existing National Grid infrastructure.



The key landscape effects would be:

- A further increase in amount of built-form in a rural location, affecting the openness and rural character of the landscape; and
- The permanent loss of approximately 4.0 ha of 'good to moderate' agricultural land (excluding the temporary loss of agricultural land (1.1ha) for the access road which would be reinstated at the end of the construction period).

The key visual effects would be:

- The prominence of the development from sections of Leys Lane and the connecting bridleway east of the site, within the vicinity of the site; and
- views from two residential properties (Nos 1 and 2 Leys Lane), approximately 200 m northwest of the site.

Apart from the permanent loss of agricultural land, predicted landscape and visual effects would be localised and relatively short in duration. As proposed screen planting matures it is predicted that adverse effects on the landscape and setting of the adjacent track/bridleway would be substantially reversed.

In relation to the views from the two residential properties north of the site, it is important to note that views from private priorities are not normally a material consideration in the determination of a planning application. However, the proposed planting would improve the outlook for these residents and could potentially be improved further by strategically located off-site planting (Refer Section 12.1 Qualifications and Recommendations).

The key landscape and visual benefits:

- there would be negligible loss of vegetation as a result of the development,
- The proposals would result in an overall increase in the amount and diversity of native trees and hedgerows compared to existing,
- Land take would be minimised by utilising the access constructed for the substation,
- The proposals would not affect the setting of any designated heritage assets.

The proposals would be compliant, or neutral, in relation to the salient parts of planning policy relating to landscape and visual issues.

12.1 Qualifications and Recommendations

The appraisal was based on summertime views (June 2022) and it is expected that the development would be more visible during winter months when the vegetation is not in leaf. However, given the amount and density of surrounding vegetation, combined with the high level of screening afforded by local topography, it is unlikely that the seasonal variation would change the findings of this appraisal.

More detailed assessment using 3D modelling and verified photomontages would be required to determine the precise degree of visibility and help visualise the size and appearance of the proposed development in relation to the adjacent substation, although it is also considered unlikely to alter the findings of this appraisal.

Whilst not essential, further consideration could be given to 'off site' planting to provide further screening of the development from Leys Lane and the bridleway east of the site and to provide further screening from the two properties to the north.



Appendix A

Drawing 01: Landscape Planning Designations and Constraints

Drawing 02: Zone of Theoretical Visibility and Viewpoint locations

Drawing 03: Landscape Mitigation Measures



Appendix B

Viewpoint Photography VP1 to VP10



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