Mace

HMP Haverigg Solar Farm
Landscape opinion

Final report
Prepared by LUC
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Contents

Chapter 1
Introduction

1.1 LUC was commissioned by Mace in December 2020 to provide advice on landscape and visual issues in relation to a proposed ground mounted solar farm on a site located within HMP Haverigg, near Millom in Cumbria.

1.2 This report provides a high-level appraisal of the likely changes to landscape and visual amenity associated with the proposed development on the site and its surroundings. The output consists of a short report summarising the process and findings of the assessment and draws broad conclusions on the potential effect from the development proposal.

Methodology

Task 1: Data gathering

1.3 This included collating readily available information on the landscape and visual receptors around each proposed site, including Landscape Character Assessments available from local council online information sources, landscape designations from Natural England's Magic mapping, Ordinance Survey mapping, aerial and street view mapping.

Task 2: Baseline reporting

1.4 This includes setting out the landscape and visual baseline of the study area, against which the proposals will be assessed.

Task 3: Summary of potential effects

1.5 This includes an appraisal of the impact of the solar PV panels and associated infrastructure on:

- landscape character; and
- views and visual amenity experienced by people, particularly local communities and recreational areas and routes.

The report highlights the main landscape and visual issues likely to be encountered and each site is given a rating using a 'traffic light' approach to categorise the likely level of potential unmitigated effects on landscape and visual amenity in relation to the proposed development as follows:

Table 1.1: Potential level of effects on landscape and visual amenity

	Major likely to have major effects on landscape and/or visual amenity
	Moderate may have moderate effects on landscape and/or visual amenity
	Minor likely to have minor effects on landscape and/or visual amenity

1.6 If moderate or major effects are anticipated, then a description of proposed mitigation measures will be included in order to avoid, reduce or offset any potential effects and any residual effects on landscape and visual amenity assessed.

Task 4: Reporting

The remainder of the report is set out below:

- **Chapter 2** sets out a description of the development;
- **Chapter 3** sets out the landscape and visual baseline;
- **Chapter 4** sets out the assessment of the potential landscape and visual effects;
- **Chapter 5** summaries the issues and potential effects.

Limitations of this report

1.7 The assessment is based on an indicative location and design of the solar PV panels and associated infrastructure only. Therefore, only 'in principle' potential issues can be highlighted.

1.8 The work in this report is based entirely on desk review of information. No site visits have been undertaken at this stage.

1.9 The scope of the brief at this stage is only to identify high-level issues in relation to the landscape and visual amenity of the study area. If a more detailed assessment if required, this will be carried out at a later stage.

Chapter 2
Description of the development

HMP Haverigg proposed ground mounted PV generation system

Typical Ground Mounted PV Panel Installation

2.1 A ground mounted PV generation system is proposed for Haverigg. Generation capacity has been sized for no export of power, with HMP Haverigg consuming all energy generated.

2.2 The panels shall be mounted in a portrait configuration, 2 modules on top of each other facing south. Work angle to be between 20 and 35 degrees. Minimum row separation to be 4 metres. The top of the PV panels in this configuration will be a maximum of 3 meters above ground level.

2.3 The inverters and AC and DC isolators shall be located on a concrete base within the location of the solar panels. A feeder pillar shall be located next to the inverters, housing a distribution board and other electrical switchgear to allow for a single SWA cable connection to the site's main switchboard. The AC SWA cable shall run from the PV generation distribution board to the site's main switchboard underground directly laid on the ground in the soft and in a duct where crossing roads or passing under footpaths, fences, etc.

2.4 On the ground, DC string cables from the solar panels to the inverters shall be contained in dedicated cable trays mounted to the panels mounting system and running on the ground between rows. Load bearing covers shall be used on ground mounted containment. All DC string cables shall have polarised weatherproof connectors.

Access Road & Fencing

2.5 The fencing will be high welded mesh fencing to perimeter of the PV panel installation. Fence to be painted green.

2.6 The access road will be located off North Lane, on the is on the southern edge of the site and will be an earthen road to allow for infrequent light vehicles access.

Trenching

2.7 A cable will be laid on the verge of the access road directly into the prison and connected to the main switchboard.

Landscaping

2.8 Land around the panels will be seeded to provide wildlife habitat. The planting will be selected from native and naturalised small shrubs to avoid shadowing to the PV panels.

Chapter 3
Landscape and visual baseline

3.1 This section describes the proposed development site (the site) and surrounding landscape and visual context, in terms of landscape character, designated landscapes, and the theoretical visibility of the proposed site.

3.2 The assessment has focused on landscape and visual receptors approximately within a 1km radius of the site (the study area), within which significant effects are considered most likely to occur in this landscape.

The landscape character of the site

3.3 HMP Haverigg lies to the south-west of Millom, around 1km west from the settlement edge of the smaller village of Haverigg. The prison complex is situated within Copeland Borough, in Cumbria.

3.4 As illustrated in **Figure 3.1**, the proposed site is positioned directly to the south of the HMP Haverigg on an area of very flat, low-lying land at an elevation of around 9m AOD. The site is in the north-eastern corner of an area of rough, brown field land. This land forms part of a former airfield, much of which is now used as the Haverigg windfarm. The landscape character of the site is very open with the surrounding field boundaries mostly marked by post and wire fencing and ditches.

Landscape character surrounding the site

3.5 The site lies within the West Cumbria Coastal Plain National Character Area (NCA 7).

3.6 The Copeland Settlement Landscape Character Assessment Draft Report (2020) identifies the site to be within the 2D Coastal Urban Fringe Landscape Character Type (LCT) and the 2Di Coastal Pasture Urban Fringe Area of Local Character[1] which it describes as an area of low lying, mostly flat farmland and recreation space around the edges of Haverigg and Millom, including an the old airfield, now used as a prison and windfarm.

[1] Copeland Settlement Landscape Character Assessment Draft Report, Part 2 (2020)

Figure 3.1: Site location

3.7 The key characteristics of the Coastal Pasture Urban Fringe Area of Local Character (ALC) are:

- Flat, low lying coastal land.
- Urban edge uses – pasture dominates, with recreation on the edge of Haverigg, industry, particularly on site of old tannery, caravan storage and holiday park, windfarm and prison estate.
- Semi-improved pasture and amenity grassland. Disused airfield to west of prison.
- Small and medium, rectangular fields. Ditch and fence boundaries, some hedgerows further inland.
- Sparse tree cover – some small farm shelter belts and hedgerows.
- Haverigg has grown out from 19th century core along main roads. Separated from Haverigg Prison and prison housing by open countryside.
- Tannery works and Prison estate, with functional, low rise buildings, dominate the built form of the landscape. Wind farm gives vertical emphasis to otherwise flat landscape.
- Open, flat large-scale landscape.
- Long open views over sea and to fells. Busy landscape, with evidence of human activity very present. Exposed to the elements. An air of neglect where buildings and land have become run down. Strong association with adjacent urban character and undeveloped landscape. Presence of roads, dereliction, buildings, railways.

3.8 The Copeland Settlement Landscape Character Assessment does not identify any sensitive viewpoints within this character type.

3.9 The other LCTs within, but on the edges of the study area include the 'Coastal Rolling Downland' to the north of the proposed development site, and the 'St Bees to Haverigg Coastal Waters MCA'. However, these areas have not been described further in this study, as they have little direct influence on the character of the site or its surroundings.

3.10 The study area around the site shares many of the characteristics of the 'Coastal Pasture Urban Fringe' ALC:

- The study area comprises an area of almost flat coastal land, characteristic of the Coastal Pasture Urban Fringe ALC, with elevation ranging from 6m to 10m AOD.
- Typical of the ALC, land use within the study area largely consist of rough ground on the site of the former airfield and regular semi-improved pasture fields of small to medium scale. The south of the study area includes an area of sand dunes and a shingle beach along the coastline.
- Semi-natural habitats are concentrated along the coast and include BAP priority habitat coastal sand dunes to the south and coastal floodplain and grazing marsh to the east and north.
- The majority of field boundaries in the study area are marked by post and wire fences and diches, although a limited number of hedgerows exist.
- Trees in the study area are limited, as noted within the ALC profile. This combined with the low field boundaries and flat landform create a large-scale and open landscape.
- The functional prison buildings and the wind turbines dominate the built form of the study area. They add to the large scale and the strong human influence on the landscape. The settlement edge of Haverigg and the presence of roads and the railway also exert an urban influence on the landscape.
- As specified within the character assessment, parts of the study area have a feeling of dereliction where the land and buildings have become run down.
- A limited number of public rights of way exist, including a public footpath running around 700m to the east of the site and a small number of more distant public footpaths to the north and west of the site.

Landscape Designations

3.11 The site does not lie within any national or local landscape designations. However, it is situated approximately 2km to the south-east of the edge of the Lake District National Park and World Heritage Site. The study area does not share many of the special qualities of the National Park except along the coastline.

Visual baseline

3.12 The proposed site is visually contained by the tall prison fencing and existing prison buildings which lie directly to the north/north-north-east of the site and tall fencing enclosing the Haverigg wind farm to the east. Views of the proposed site from recreational routes and lanes to the north of the study area will be screened by the intervening prison buildings.

3.13 Otherwise, the flat landform offers very little visual enclosure and allows long-distance views across the landscape, south to the coast and north to the sharply rising fells. The study area has a very large-scale character due to the medium scale fields bound by post and wire fencing limiting visual enclosure. The only exception to this is along the coast, approximately 1km to the south of the site, where

extensive hummocky dunes and gorse scrub screen views from the beaches inland towards the site.

Theoretical Visibility

3.14 Google Earth and Street View has been used to identify the theoretical visibility of the proposed site and indicative areas from where the proposed development may be visible. Taking into consideration the nature and small scale of the proposed development, it is anticipated the proposed solar farm would be relatively imperceptible from views beyond 1km, as vegetation, field boundary fencing and existing built development would provide intervening features. However, this analysis is indicative only and further detailed work, including visits to the site and surrounding area would be required to verify the likely visibility of the proposed development.

3.15 The key receptors with potential impacts are identified as:

- Residential receptors in the Bank Head housing estate to the north-east.
- Residential receptors on the western settlement edge of Haverigg to the east.
- Recreational receptors on the public footpath to the east of the site along Haws Lane.
- Recreational receptors at the Haverigg Motocross track to the west.
- Recreational receptors along the coast road/public footpath south east of the site and at Millom Rugby Union Football Club/ Haverigg Caravan & Camping site

Residential Visual Amenity

3.16 With regards to developments other than wind energy proposals, the Landscape Institute's Residential Visual Amenity Assessment (RVAA) Technical Guidance Note 2/19 states that "*…other development types including potentially very large but lower profile structures and developments such as road schemes and housing are unlikely to require RVAA, except potentially of properties in very close proximity (50-250m) to the development*".

3.17 There are no residential properties within 250m of the proposed development site, with the nearest residential properties at the Bank Head housing estate, situated around 375m to the north east of the site. Therefore, there are no properties considered to be in 'close proximity' to the development in terms of the RVAA.

Chapter 4
Landscape and visual constraints and mitigation opportunities

Potential constraints

4.1 The following table sets out key landscape and visual receptors which pose a potential constraint; provides commentary in relation to potential landscape and visual effects in relation to the proposed solar farm development; and provides a risk category in accordance with the traffic light scoring system identified in the methodology.

Receptor	Commentary	Rating of potential unmitigated effects
	Likely Landscape effects	
Coastal Pasture Urban Fringe ALC	The proposed development will result in unavoidable direct landscape effects through the change in land use from rough ground on the former airfield to a solar farm development and associated access tracks. These direct effects will be localised due to the small extent and height (3m) of the proposed solar development and surrounding high weld mesh fencing.	**Minor**
Coastal Rolling Downland ALC	There will be no direct landscape effects on the Coastal Rolling Downland LCA. There may be some very limited visibility of the site from local elevated areas on Great Knott to the north of the site, however these impacts are likely to be screened by the existing prison buildings. Indirect effects are therefore anticipated to be very limited.	**Minor**
St Bees to Haverigg Coastal Waters MCA	There will be no direct effects to the character of the St Bees to Haverigg Coastal Waters MCA. There may be some views to the proposed development from the MCA, however any views will be distant and seen in context with the exiting prison buildings as well as the surrounding windfarms. Indirect effects are therefore anticipated to be very limited.	**Minor**
	Likely Visual effects	
Residential receptors at Bank Head (approx. 375m to	Boundary fencing and existing prison buildings will screen views to the proposed development for most residential receptors in the Bank Head housing estate. However, there	**Minor**

Receptor	Commentary	Rating of potential unmitigated effects
the north-east of the site) – high sensitivity	may be glimpsed views of the proposed development from the second storey of properties or over boundary fences and between existing prison buildings from some properties. Given the proximity of the receptors to the proposed development, there will be a small change to the landscape within views, as the field will be overlaid by an array of PV panels. However, these changes will be seen in the context of the existing prison buildings and therefore it is unlikely to be more than a minor change to the character of views from these properties.	
Residential receptors on the western settlement edge of Haverigg (approx.1km to the east and south-east of the proposed site) – high sensitivity	There may be intermittent and distant views to the proposed development from properties on the existing settlement edge of Haverigg. However, boundary fencing and existing prison buildings will have significant screening effect on views to the proposed development. Where visible, these changes will be seen in the context of the existing prison buildings and therefore it is unlikely to be more than a minor change to the character of views from these properties.	**Minor**
Recreational users the PRoW along Haws Lane (approx.650m to the south-east of the site at its closest) – high sensitivity	Sections of the PRoW, most notably in the south where the path crosses flat open fields, may have some direct views to the proposed development. However, from other sections of the path the prison buildings and perimeter fencing enclosing the windfarm and prison will provide screening along with some remnant field boundary vegetation. Recreational receptors have a high sensitivity to change, however, these changes will be seen in the context of the existing prison buildings and both onshore and offshore wind farms. Overall, there will be a moderate change to the character of views from these properties.	**Moderate**
Recreational users of Haverigg Motocross track (approx. 1km to the west) – moderate sensitivity	There may be some open views to the proposed development from parts of the motocross track to the west where there are fewer field boundary features. However, these views will be distant and seen in the context of the existing prison buildings and both onshore and offshore wind farms. Overall, there is unlikely to be more than a minor change to the character of the view. The nature of these receptors, who will be engaged in an outdoor sport, which does not involve an appreciation of views of the landscape, also means that they are less sensitive to landscape change.	**Minor**
Recreational users of the coastal road and Millom Rugby Union Football Club/ Haverigg Caravan & Camping site (approx.1.2km to the south-east of the site)	The coastal road, also a PRoW, which extends from Haverigg, to the south west of the site, lies over 1.2km from the site and recreational facilities along this route including the Millom Rugby Union Football Club and a caravan park. Any views towards the proposed site from these locations will be distant and the development seen within the context of the larger prison buildings and filtered by remnant field boundary vegetation. Hummocky coastal dunes and gorse scrub along the coast also filter views inland towards the site.	**Minor**

Chapter 5
Conclusions

5.1 The receptors at greatest risk of adverse effects from the proposed development are visual receptors in close proximity to the site, particularly for users of the public footpath to the east of the site.

5.2 Existing fencing to the east enclosing the windfarm and the prison fencing and prison buildings to the north will contribute towards mitigating effects by providing screening to the proposed development.

Proposed mitigation

5.3 Fencing and trees in surrounding field boundaries (where present) should be retained. The Landscape Character Assessment identifies the planting of woodland belts or thick hedgerows along the edge of developments as a possible mitigation measure to soften their impacts. Whilst some tree planting in field boundaries may be appropriate to help mitigate views, the majority of the LCT has an open character with very sparse tree cover so care should be taken that it does not become an incongruous feature of the landscape.

Residual Effects

5.4 There will be an inevitable change to the external appearance of the field in which the solar farm is proposed. However, once mitigation planting is established there will be little material change to the premises when viewed from outside the site.