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WASTE RESOURCE MANAGEMENT



LIGHTSOURCE RENEWABLE ENERGY LTD

Erlas Farm, Wrexham

Flood Consequence Assessment

July 2015

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Erlas Farm, Wrexham

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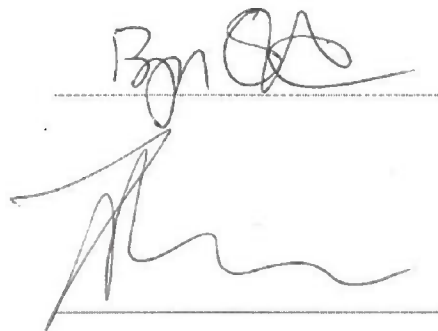
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DRAWINGS

PE10552-001	Site Location Plan
PE10552-002	Surface Water Flood Risk
EHF_01_Rev01	Erlas Hall_Proposed_Layout_Rev1

1 INTRODUCTION

1.1 Instructions

- 1.1.1 This Flood Consequence Assessment report (FCA) has been prepared in accordance with instructions from Lightsource Renewable Energy Ltd.

Planning Application

- 1.1.2 The FRA is intended to support a planning application for a solar farm development at Erlas Farm to be submitted to the Wrexham County Borough Council Planning Department.

1.2 Background Information

Flood Consequence Assessment

- 1.2.1 In 2004 the Welsh Government published Planning Policy Wales Technical Advice Note 15 (TAN15), which explains how flood risk should be taken into consideration during the planning and development process. Figure 1 of TAN15, reproduced below, defines the flood zones used within the Welsh Planning Policy and indicates the planning requirements for sites in each zone.

Figure 1: Flood Zones		
Description of Zone		Use within the precautionary framework
Considered to be at little or no risk of fluvial or tidal/ coastal flooding	A	Used to indicate that justification test is not applicable and no need to consider flood risk further
Areas known to have been flooded in the past evidenced by sedimentary deposits	B	Used as part of a precautionary approach to indicate where site levels should be checked against the extreme (0.1%) flood level. If site levels are greater than the flood levels used to define adjacent extreme flood outline there is no need to consider flood risk further
Based on the Environment Agency Extreme flood outline, equal to or greater than 0.1% chance of flooding (river, tidal or coastal),	C	Used to indicate that flooding issues should be considered as an integral part of decision making by the application of the justification test including assessment of consequences.
Areas of the floodplain which are developed and served by significant infrastructure, including flood defences	C1	Used to indicate that development can take place subject to application of justification test,

Figure 1: Flood Zones		
Description of Zone		Use within the precautionary framework
		including acceptability of consequences.
Areas within the floodplain without significant flood defence infrastructure	C2	Used to indicate that only less vulnerable development should be considered subject to application of justification test, including acceptability of consequences. Emergency services and highly vulnerable development should not be considered.

- 1.2.2 The Welsh Government has produced Development Advice Maps (DAMs) to TAN15 specifications. These maps indicate the level of flood risk across Wales (ie Zones A, B, C, C1 and C2 as defined in TAN15).

Wrexham Preliminary Flood Risk Assessment

- 1.2.3 A Preliminary Flood Risk Assessment (PFRA) is a high level screening exercise to identify areas where there is significant flood risk from local sources, namely ordinary watercourses, surface water runoff and groundwater. Main River and tidal flooding is considered in the context of their interactions with the above flood risks. PFRAs have been produced by Lead Local Flood Authorities (LLFAs) to fulfil statutory requirements in the Flood Risk Regulations 2009. Since April 2015, LLFAs have become statutory consultees on planning applications for the above sources of flood risk. The LLFA is Wrexham County Borough Council.

1.3 Data Sources

- 1.3.1 The TAN15 Development Advice Maps¹ and the EA website *Risk of Flooding from Surface Water*² map have been referred to.
- 1.3.2 Natural England Technical Information Note TIN101 *Solar Parks: Maximising Environmental Benefits* is attached as Appendix I.

¹ <http://data.wales.gov.uk/apps/floodmapping/>

² wiyby.environment-agency.gov.uk

2 SITE INFORMATION

2.1 Existing Site

- 2.1.1 The site is located in open countryside approximately 1.2km east of Wrexham as shown on Drawing No. PE10552-001 '*Site Location Plan*'. The site is surrounded by agricultural land on all sides. Erlas Lane runs north-south approximately 300m east of the site.
- 2.1.2 The site consists of a narrow area of agricultural land, aligned east-to-west, with an area of approximately 8.73 ha. The site is surrounded by further agricultural land on all sides.
- 2.1.3 The fields slope generally eastwards and south-eastwards from a maximum elevation of 57m AOD at the western site boundary to a minimum elevation of 45m AOD at the south-eastern corner of the site. The maximum gradient on site is approximately 1 in 15.

2.2 Watercourses and Local Drainage

- 2.2.1 The nearest major river to the site is the Redwither Brook, a Main River, flowing south-eastwards approximately 900m east of the site. The river is culverted beneath the Wrexham Industrial Estate and joins the River Clywedog approximately 2.5km south-east of the site.
- 2.2.2 The nearest watercourse to the site is an unnamed stream adjacent to the south-eastern site boundary, downstream of nearby springs. The stream flows eastwards to join the Redwither Brook in Wrexham Industrial Estate approximately 950m south-east of the site.

2.3 Geology

- 2.3.1 The geology of the site consists of bedrock of the Kinnerton Sandstone Formation. Superficial deposits in the west of the site consist of Devensian Glaciolacustrine Deposits (clay and silt). The superficial deposits in the east of the site consist of Devensian Diamicton till.

2.4 Installation Proposals

2.4.1 It is proposed to install an array of solar PV panels with a generating capacity of approximately 4.52 MW, as shown on Drawing No EHF_01_Rev01 'Erlas Hall_Proposed_Layout_Rev1'.

2.4.2 In addition to the solar panels, there will also be several small installations with impermeable roofs:

- Field Transformer 2 No.
- Site Transformer 1 No.
- Inverter Station 3 No.
- DNO Substation 1 No.
- DNO Meter 1 No.
- Client Side Substation 1 No.
- Communications Building 1 No.
- Storage Shed 1 No.

2.4.3 The majority of these installations will be installed in the north-eastern corner of the site, adjacent to the site access. Field transformers and inverter stations will be installed towards the centre of the site.

2.4.4 The estimated total impermeable area of these structures is approximately 126m² which constitutes approximately 0.14% of the total site area of 8.73 ha.

2.4.5 Access to the site will be in the north-eastern corner of the site from agricultural land off Erlas Lane. There will be approximately 520m of 3.5m wide permeable access tracks within the site area which will comprise an area of approximately 1,820m², equivalent to approximately 2.1% of the site area. The access tracks will consist of permeable aggregate, and pipe culverts will be installed below them where necessary to permit the passage of surface water.

2.4.6 The solar panel assemblies will be 4m across and set at an angle of 20 degrees so that they occupy a horizontal width of about 3.8m. Consequently, the panels will occupy about 32% of the development area.

- 2.4.7 Each row will consist of four individual lines of panels, separated horizontally by three 25mm wide gaps through which rain water will be able to drain. This means that rainwater from the panels will run off from these three gaps and at the lower edge of the 4m slope length. The panels will be supported on metal posts driven into the ground without any form of concrete base.
- 2.4.8 The lower edge of the panels will be set at 0.8m above ground level making the upper edge around 2.2m above ground level.
- 2.4.9 Following commissioning of the project the land between and beneath the solar panels will be cultivated and established with a thick sward of tussocky grass.

3 FLOODING INFORMATION

3.1 Flood History

- 3.1.1 The Wrexham County Borough Council PFRA does not contain any records of historical flooding from ordinary watercourses, surface water, groundwater, sewers or canals in the site area or its vicinity.
- 3.1.2 The TAN 15 Development Advice Map (DAM) also does not show any areas of Flood Zone B (*“areas known to have flooded in the past”*) in the vicinity of the site.

3.2 Potential for Flooding

Fluvial Flooding

- 3.2.1 The TAN 15 Development Advice Map (DAM) shows the site is located within Flood Zone A, where there is little or no risk of coastal/tidal flooding.
- 3.2.2 There is a narrow area of Flood Zone C2 approximately 900m to the east of the site, coincident with the course of the Redwither Brook. Land in this area is at an elevation of approximately 40m AOD, approximately 5m below the minimum elevation of the site.
- 3.2.3 The Wrexham County Borough Council PFRA does not identify any flood risk from Non-Main Rivers in the vicinity of the site. The flood risk from Main Rivers is not considered directly in the PFRA.

Flooding from Surface Water Runoff

- 3.2.4 The site comprises agricultural land which drains naturally by infiltration, evaporation and transpiration. Any surplus surface water that forms will tend to run off generally eastwards and south-eastwards towards the site boundaries. Survey data shows that there are no localised topographical depressions in the site area where runoff could accumulate.
- 3.2.5 Land to the north of the site, falls generally southwards and south-eastwards towards the site, however, any surface water runoff is likely to continue flowing towards the site boundaries as opposed to accumulating and remaining on site.

- 3.2.6 The EA's *Risk of Flooding from Surface Water* map shows the majority of the site area is considered to be at very low risk of surface water flooding. There are narrow areas considered to be at risk of flooding located beyond hedgerows adjacent to the southern boundary of the site and coincident with the unnamed watercourse adjacent to the south-eastern site boundary. Small areas of these extend to within the site area, however, Drawing No. PE10552-002 '*Surface Water Flood Risk*', shows that no solar panels or other site infrastructure will be located within these areas.
- 3.2.7 The Wrexham County Borough Council PFRA does not identify any areas of the site to be at risk of surface water flooding.

4 FLOOD RISK ASSESSMENT

4.1 Fluvial Flooding

- 4.1.1 The TAN 15 Development Advice Map (DAM) shows that the site is located within Flood Zone A where there is little or no risk of fluvial or coastal/tidal flooding. All uses of land are appropriate in this zone.

4.2 Flooding from Surface Water Runoff

- 4.2.1 The site currently comprises approximately 8.73 ha of agricultural land. Soils in the west of the site are described as '*freely draining*' on the Soilscales website³ and soils in the east of the site are classified as '*slowly permeable*', this, along with the sedimentary sandstone bedrock means infiltration is unlikely to be greatly impeded.
- 4.2.2 Rainfall which does not infiltrate and is not taken up by vegetation will flow overland generally towards the east and south-eastern site boundaries as opposed to remaining on site.

4.3 Ground Treatment

- 4.3.1 After development, the soil will be cultivated by 'subsoiling' to loosen the compacted topsoil, if necessary, and a thick sward of tussocky grass grown over the entire site area, (ie both beneath the panels (32% of the site area) and in the spaces between them (66% of the site area)).
- 4.3.2 This thick grass will retard runoff and promote water retention, infiltration, transpiration and evaporation, whilst the cultivation will further facilitate infiltration. It will be maintained in accordance with good soil husbandry practice as described in Natural England TIN101 (see Appendix I) and mown regularly or otherwise maintained by low intensity stock grazing. The ground will be inspected for damage at regular intervals with any eroded areas being repaired and temporarily protected until the grass becomes re-established.
- 4.3.3 All works will be designed in a way which will not impact upon the existing surface water drainage regime. Because the solar panels are supported on metal posts driven into the ground without any form of concrete base, they will not occupy any ground

³ <http://www.landis.org.uk/soilscales/#>

surface area and their presence will not affect the present character of the ground. Rain falling on the panels will run off onto the ground and disperse by a combination of infiltration, transpiration, evaporation and runoff, just as it does at present while falling directly onto the ground. Therefore, there will be no net increase in runoff reaching the site boundary.

- 4.3.4 Rainwater running off the panels will concentrate along three lines evenly spaced beneath the rows of panels. Any local erosion which might result from this trend will be mitigated by the thick sward of tussocky grass and its regime of regular maintenance.

Surface Areas

- 4.3.5 The proposed installations will introduce some impermeable roof areas amounting to approximately 126m², equivalent to 0.14% of the site area. The increase in impermeable area will, therefore, be negligible.
- 4.3.6 Runoff from the inverter cabins and substation buildings will be directed to the surrounding ground and will follow the same drainage routes as pre-development runoff, flowing eastwards and south-eastwards towards the site boundaries.
- 4.3.7 There will also be some 1,820m² of permeable stone surfaced access tracks introduced which constitutes about 2.1% of the total site area.
- 4.3.8 The use of permeable materials will minimise the runoff from these tracks and pipe culverts will be installed below them so as not to impede natural flows. Any land drains disturbed during construction will be rerouted. Shallow swales will be formed alongside the tracks and flows will be turned out to the adjacent land at regular intervals to mimic the natural land drainage. This is normal practice for similar developments in the open countryside, where impacts will be minimal, and considered suitable for use on this site.
- 4.3.9 No other engineered drainage features are proposed and it is considered unnecessary to install any on a precautionary basis. Should it prove difficult to satisfactorily execute the maintenance regime without positive drainage features, these can be installed where needed as part of the maintenance process.

- 4.3.10 Consequently, it is not considered that there will be any significant detrimental effect caused either within the site or to the surrounding area by future surface water runoff from the solar farm which will therefore be an appropriate land use.

Surface Water Flood Map

- 4.3.11 A comparison between the indicated areas of flood risk on the EA's *Risk of Flooding from Surface Water map*, with the topography and proposed site layout is shown on Drawing No. PE10552-002 '*Surface Water Flood Risk*'. On the drawing it can be seen that the solar panels and other site infrastructure will not be constructed in the area where flooding may occur. Consequently, the surface water flood risk indicated by the EA map is not regarded as an issue.

4.4 Foul Sewerage

- 4.4.1 There will be no requirement for foul sewerage or sewage disposal at the site.

5 CONCLUSIONS

- 5.1.1 The development is entirely situated in Flood Zone A where there is little or no risk of fluvial or coastal/tidal flooding. The proposed renewable energy land use fully complies with the planning guidance.
- 5.1.2 As the panels will not create impermeable area and any risk of erosion due to concentration of runoff will be mitigated by the cultivated soil and thick sward of tussocky grass and its maintenance regime, there will be no net increase in runoff reaching the site boundary.
- 5.1.3 The minimal increase in surface water runoff resulting from the installations will be dealt with by dispersal to the surrounding land, thereby not increasing the likelihood of flooding elsewhere. Similarly, runoff from the stoned access tracks will be reduced by the use of permeable materials and collected in shallow swales with regular turn out features to dissipate the flows across the site.
- 5.1.4 No other engineered drainage features will be necessary unless proven so by the maintenance regime, in which case they will be installed where needed.
- 5.1.5 There will be no requirement for foul sewerage or sewage disposal at the site.
- 5.1.6 Overall, with regard to flood risk and drainage, the site is suitable for its proposed use as a solar farm.

APPENDIX I

Natural England Technical Information Note TIN101

Solar parks: maximising environmental benefits

Solar energy, in common with other forms of renewable and low carbon energy sources is a valuable part of the UK's energy future. This information note pulls together a summary of advice relating to solar parks, their siting, their potential impacts and mitigation requirements for the safeguarding of the natural environment and the opportunities there may be for financial support through environmental stewardship. The aim is to help developers and landowners consider how they might maximise the environmental benefits of a solar park whilst avoiding or minimising the risk of damaging environmental features. If you would like to discuss any issues please see the *Further information* section below for contact details.

Definition

Solar parks are installations of multiple solar photovoltaic (PV) modules, usually mounted 1.5-2.5 metres above either greenfield or brownfield land occupying between 2 and 15 hectares. These figures are based on current installations and technology and this note will be updated as the technology and circumstances develop. Other notes also may be written as and when required and information becomes available.

Background

Like any type of development, solar parks have the potential to affect the landscape, natural habitats, soils and geological and archaeological features. Damage may be caused during operation or when panels are being erected or decommissioned. Cumulative impacts might also occur when parks are sited close to one another. Well located and designed solar parks may not only avoid negative environmental impacts, but may also deliver additional benefits to the environment beyond low carbon energy.

Some solar farms will need planning permission from the planning authority, for more information contact your local council. If you are considering developing a solar park you can avoid any unnecessary delays and costs by discussing

your proposals with Natural England at the earliest opportunity.



German solar farm with sheep grazing below panels

Our specialists should be able to advise you from the outset on what to do to safeguard the environment. To date (June 2011) Natural England has recommended consent to 90% of all onshore energy schemes (of all types) and 100% of those offshore. Schemes which progress smoothly share some common characteristics, including engagement with Natural England well before the formal consultation phase required by legislation.

Solar Parks: maximising environmental benefits

Key points

A range of technical considerations inform site selection and the detailed design of solar park developments. These include:

- solar resource;
- topography; and
- proximity to existing grid infrastructure.

Environmental considerations that also need to take into account include:

- soils and soil structure;
- wildlife habitats and designated sites;
- effects on specific wildlife species;
- damage to designated landscapes;
- effects on the character of the landscape;
- damage to geological and archaeological features; and
- implications of water run-off.

The importance of vegetation

Vegetation is vital for wildlife, and steps should be taken to reduce the risk of reducing vegetation, for example, through excess shade or lack of rainwater. Good vegetation cover is also needed to protect soil and water, as well as provide grazing for livestock. Therefore the need to retain, encourage and manage appropriate vegetation cover needs to be considered early in the design of any solar farm.

Soil protection and husbandry

The long term capability of agricultural land, in particular the *Best and Most Versatile* agricultural land, needs to be safeguarded during the construction, operation and decommissioning of solar panels. To maintain good soil structure and water infiltration:

- soil organic matter levels should be retained or enhanced;
- compact areas of soil should be loosened; and
- existing land drainage maintained.

Excessive run-off may need to be diverted to grassed soak-aways so as to avoid soil erosion.

Good soil husbandry includes avoiding unnecessary soil disturbance and avoiding trafficking on soils when they are wet as this will cause compaction. Trackways and other sealed areas should have carefully designed drainage to avoid creating a pathway for erosion.

Reversibility and permanence also need to be considered. How easy would it be to convert and decommission these areas and put them to other use?

Any development should leave the land capable of supporting agriculture, especially if it is *Best and Most Versatile*, and/or semi-natural habitats in the future.

For information on identifying best and most versatile agricultural land see TIN049 *Agricultural Land Classification: protecting the best and most versatile agricultural land* and for guidance on soil protection see the Defra publication *Construction Code of Practice for the Sustainable Use of Soil on Construction Sites*. Details are available in *Further information* below.

Protecting watercourses

The key to avoiding increased run-off and soil into watercourses is to maintain soil permeability and vegetative cover. Permeable land surfaces underneath and between panels should be able to absorb rainfall as long as they are not compacted and there is some vegetation to bind the soil surface. Spraying off vegetation to prevent it growing between the panels would increase the risks of erosion, carbon emissions, run-off and pollution to watercourses.

Any associated infrastructure such as concrete surfaces and tracks should be designed so as to avoid direct run-off into watercourses and other sensitive areas.

The risks of run-off and soil erosion are lowest on low gradient land and cohesive soils and highest on dry, sandy and steeply sloping soil surfaces.

Solar Parks: maximising environmental benefits

Biodiversity

Protecting wildlife

The location of solar parks should avoid sites of high wildlife value, in particular, designated sites such as Sites of Special Scientific Interest (SSSIs), Special Protection Areas and Special Areas of Conservation. Any development proposed on land within or adjacent to designated sites is likely to have an adverse effect on the environmental features for which they were designated, in particular during the construction phase.

Solar parks can affect wildlife where they are near sites of high wildlife value. For example, near a bat roost where the land may be used for foraging or to navigate to foraging sites, thereby reducing the foraging area available to them. There are some indications that very large, unbroken expanses of uniform solar panels may mimic water surfaces on which insects may attempt to settle and breed. If this proves to be a problem, then mitigation measures will be sought and publicised.

Very little research has been conducted to date, but one laboratory study undertaken by Bjoern Siemers and Stefan Grief (2010) showed that bats attempted to drink from the panels and occasionally collided with them. If the plates were vertically aligned they often crashed into them when attempting to fly through them. Juvenile bats are expected to be more prone to this behaviour. Some birds and invertebrates are also likely to be affected by solar parks developed close to areas of high wildlife value.

Where a solar park is proposed within or close to such sensitive sites, the planning application should include a detailed assessment of the likely impacts on the ecological interest of the sites and contain practical measures which avoid or minimise any adverse effects on their features of interest. Any solar park close to a designated site will need to demonstrate that it would not compromise the objectives of the designation.

Biodiversity: mitigation

With specialist ecological advice there may be opportunities to mitigate potential impacts on species and habitats through measures such as:

- Precise layout and spacing of PV modules.
- Habitat creation and enhancement on adjacent land to offset habitat loss.
- Timing of construction activity.
- Careful use of lighting.

Sites with low wildlife value, for example, intensive arable or grassland fields are likely to offer greatest opportunity for wildlife. Not only will they avoid adverse impacts, but they are also more likely to deliver environmental benefits.

Biodiversity enhancement

Solar park sites, especially on sites of lower existing biodiversity value may offer opportunities to deliver enhancement measures.

These should be considered on a site by site basis and are likely to be most effective when they contribute to local biodiversity priorities identified through your local Biodiversity Action Plan. These should be available on the web.

Creating grasslands and hedgerows on the areas around the panels is likely to offer most benefits for plant and animal communities. You can also consider creating ponds where the conditions are appropriate and planting wild bird seed mixtures for birds and nectar and pollen rich margins for bees and butterflies.

You need to consider what ongoing management will be required to maintain the habitat and who and how this will be done. You can get advice from a variety of sources, including consultants and voluntary groups, as well as Natural England.

Some habitats require more management than others. For example if you want to establish flower-rich grassland around panels you will need to graze or cut and remove the herbage. Grazing is best and sheep or goose grazing is likely to be more suitable than cattle grazing, which is unlikely to be practical.

Establishing native trees and hedgerows will provide nesting, roosting and foraging opportunities for birds and invertebrates. They can also help screen the panels where they may be intrusive in the landscape.

Solar Parks: maximising environmental benefits

When planning and creating habitats consider long term management issues, such as:

- Is the management sustainable while the park is operating?
- Will the habitat survive and continue to be managed once the park has been decommissioned?

A management plan should help establish clear objectives and responsibilities for management and maintenance of any habitats created. The plan should also consider the budget needed to cover regular maintenance. If you are not the landowner, then local farmers may be best able to do this flexibly in response to need.

Landscape

It is recognised that solar parks can change the character and visual experience of a given area or landscape, and that they may become an element of the future UK landscape as part of our response to climate change. Careful site selection and design is the best way to avoid or minimise potential adverse landscape and visual impacts.

The location and design can be informed by existing Landscape Character Assessments and by responding to any landscape and visual assessments that are undertaken.

Designated landscapes

The presence of a designated landscape for example a National Park or an Area of Outstanding Natural Beauty is likely to reduce the degree to which a solar park can be successfully accommodated, and a proposal within, or close to, one of these sites will need to demonstrate that it would not compromise the objectives of designation.

Landscape character considerations

Table 1 on page 6 identifies landscape character factors that can aid site selection and design. It provides a general guide, but is not a rigid checklist as most landscapes will display a mixture of factors indicating both greater and lesser degree to which solar PV parks can be accommodated, these should be considered 'in the round'.

Visual considerations

Generally impacts are likely to be greater in hilly areas and more easily avoided or mitigated against in flatter areas. Solar parks are also likely to be more acceptable where there are simple landscape patterns, such as those associated with later phases of agricultural enclosure.

Where the land form is flatter existing and new natural features (for example, trees, hedgerows, ridges) as well as buildings, roads and railways are more likely to screen solar parks.

Historic environment

The historic environment is linked to wider landscape considerations and in some locations can also be an important feature in its own right. Solar parks should not be located on Scheduled Ancient Monuments. Other archaeological sites should also be avoided as they could easily be damaged, even where they are not visible above soil level.

Geology and geomorphology

Geological and geomorphological features may be designated as SSSIs or Local Geological Sites or may be an important part of the local landscape character. The siting of solar parks should take full account of designated geological and geomorphological features and in particular ensure they do not impact of the integrity and visual appreciation of geomorphological landforms and processes.

Landscape enhancement

Where enhancement measures (these may also be biodiversity measures) will contribute to a local landscape strategy or enhancement plan, solar park developments may be able to leave a positive landscape legacy.

Single Payment Scheme

If you have land which is being developed as a solar park, you will need to consider whether it needs to be deducted from any claim for payments under the Single Payment Scheme (SPS). This section explains how the SPS eligibility rules relate to solar park land.

Solar Parks, maximising environmental benefits

To be eligible for SPS, the land must be predominantly used for agricultural activity and, with limited exceptions, this requirement applies throughout the whole calendar year. For further information about the SPS eligibility rules please read the latest version of the SPS Handbook for England which is available on the Rural Payments Agency website (see link in *Further information* below).

SPS eligibility: land use

For a land parcel to be eligible for SPS, you must be able to demonstrate that the land is predominantly used for agricultural activity. This is easier to do if the land is being grazed or harvested rather than if it is just being kept in Good Agricultural and Environmental Condition (GAEC).

In a land parcel which is predominantly used for agricultural activity, any areas which are taken up by the solar panels themselves, in a way that does not allow the areas underneath to be grazed or used for agricultural activity, will not be eligible for SPS. These areas must therefore be shown on the Rural Land Register (RLR) as SPS ineligible features, and must be deducted from any SPS application.

Where the solar panels are elevated from the ground, such as on a mast or framework of multiple poles, the area of the mast itself (or of the poles), and any associated hard-standing, is not eligible but the land surrounding it (ie under the panels) may be eligible, provided it can still be used for agricultural activity, for example if it is capable of being grazed. Such eligible land may be claimed for SPS, and should be shown on the RLR as part of the maximum eligible area for SPS.

If the predominant use of the land parcel is for solar panels, ie non-agricultural activity, the whole land parcel will be ineligible for SPS.

SPS eligibility: land availability

The farmer must be carrying out an agricultural activity on the land (at least maintaining it in good agricultural and environmental condition) and have it at their disposal on the date of the application deadline (usually 15 May) of the scheme year. The land must also remain eligible for SPS for the full calendar year.

SPS eligibility during the installation

Depending on how much of the land parcel is affected by the work, and the extent to which it is affected, it is unlikely that the land parcel will be eligible while this is being done. Therefore the land parcel should probably be excluded from the claimed area for the scheme year in which the solar park is being set up.

Agri-environment schemes

Developers and land managers have sought clarification on the extent to which solar PV affects, or is compatible with, Environmental Stewardship agreements. There is some potential for solar PV parks to coexist with agricultural land use and/or land managed for nature conservation benefit. The extent to which this occurs will depend on the existing land use and, where agri-environment agreements are in place, the requirements of those schemes. The criteria used to identify eligible land under SPS also applies to agri-environment schemes.

Entry Level Stewardship

Based on Section 1.3 (the eligibility section) of the 3rd edition of the Entry Level Stewardship Handbook, where the land can be grazed or used for any agricultural purpose then it can count towards the points target for the agreement. However, management options must not be placed directly on this land. Part parcel or boundary options can be located on the specific land parcel as long as they are not directly located on the actual area covered by solar arrays.

Higher Level Stewardship

Your local Natural England Adviser should be contacted for advice when considering Higher Level Stewardship and the impact of solar PV parks. They will be able to interpret the proposals and determine the potential impact from the installation of the solar panels. The issues raised within this guidance should be considered in the round by the adviser before a decision is made regarding an application or agreement.

Cross compliance

If you claim SPS, Uplands Transitional Payment and/or Environmental Stewardship, all your

Solar Parks: maximising environmental benefits

agricultural land must also meet the cross compliance requirements, including keeping the land in Good Agricultural and Environmental Condition (GAEC), for the whole of the calendar year.

If you have concerns about complying with any cross compliance rules during the installation of the solar park, it may be possible to get a derogation by requesting one from the Rural Payments Agency in advance of the work taking place and explaining what standards may not be met. See below for a link to the cross compliance advice website.

Further information

Natural England Technical Information Notes are available to download from the Natural England website: www.naturalengland.org.uk. In particular see:

- TIN049 *Agricultural Land Classification: protecting the best and most versatile agricultural land*

See also:

Construction Code of Practice for the Sustainable Use of Soils on Construction Sites
www.defra.gov.uk/publications/2011/03/27/construction-cop-soil-pb13298/

Rural Payments Agency rpa.defra.gov.uk

Cross compliance
www.defra.gov.uk/crosscompliance/

For further information and details of your local Natural England Adviser contact the Natural England Enquiry Service on 0300 060 0863 or e-mail enquiries@naturalengland.org.uk.

Prepared by Natural England in consultation with NFU and FWAG. Editor Susie Smith. Photograph courtesy of Low Carbon Solar Partners.

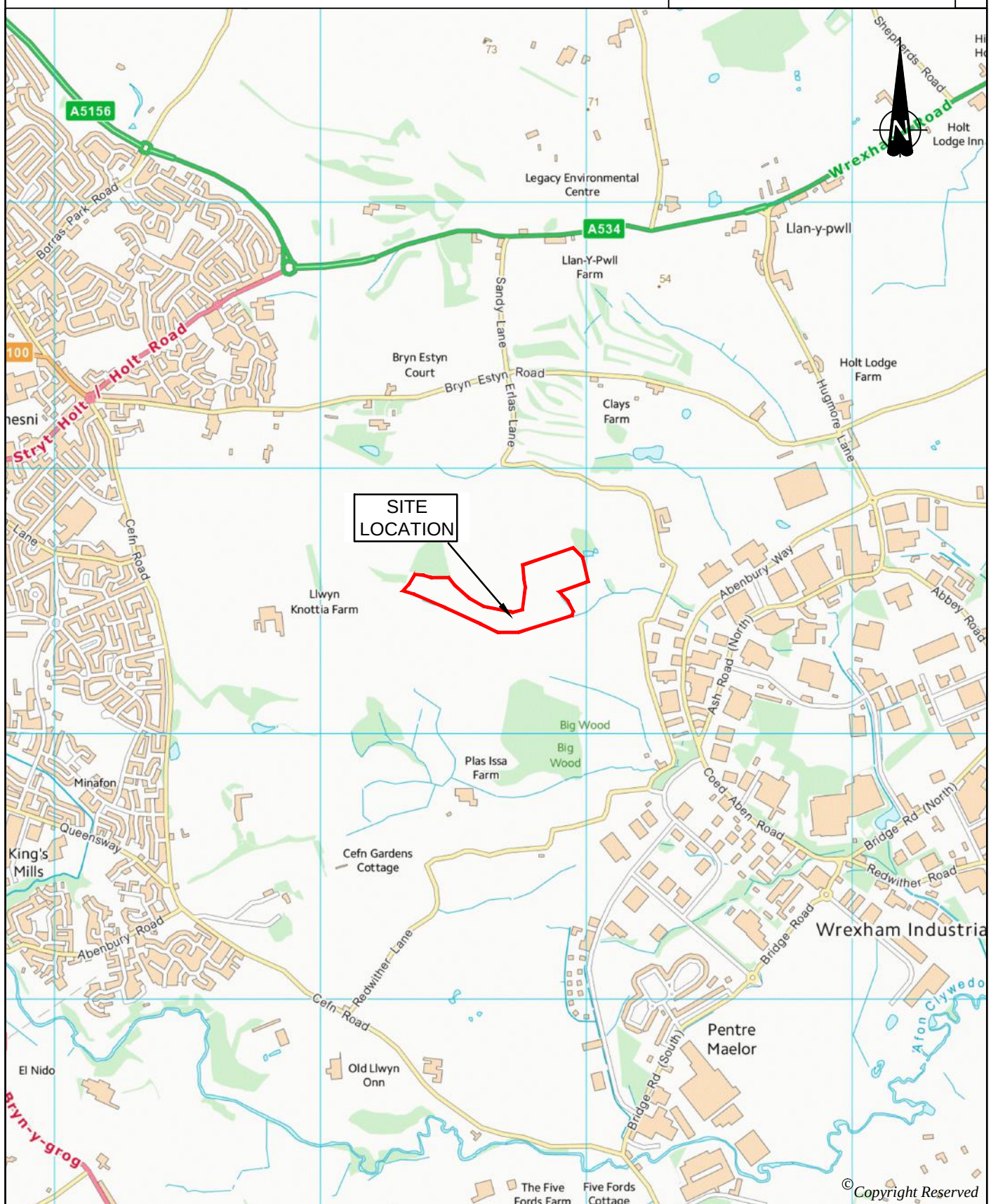
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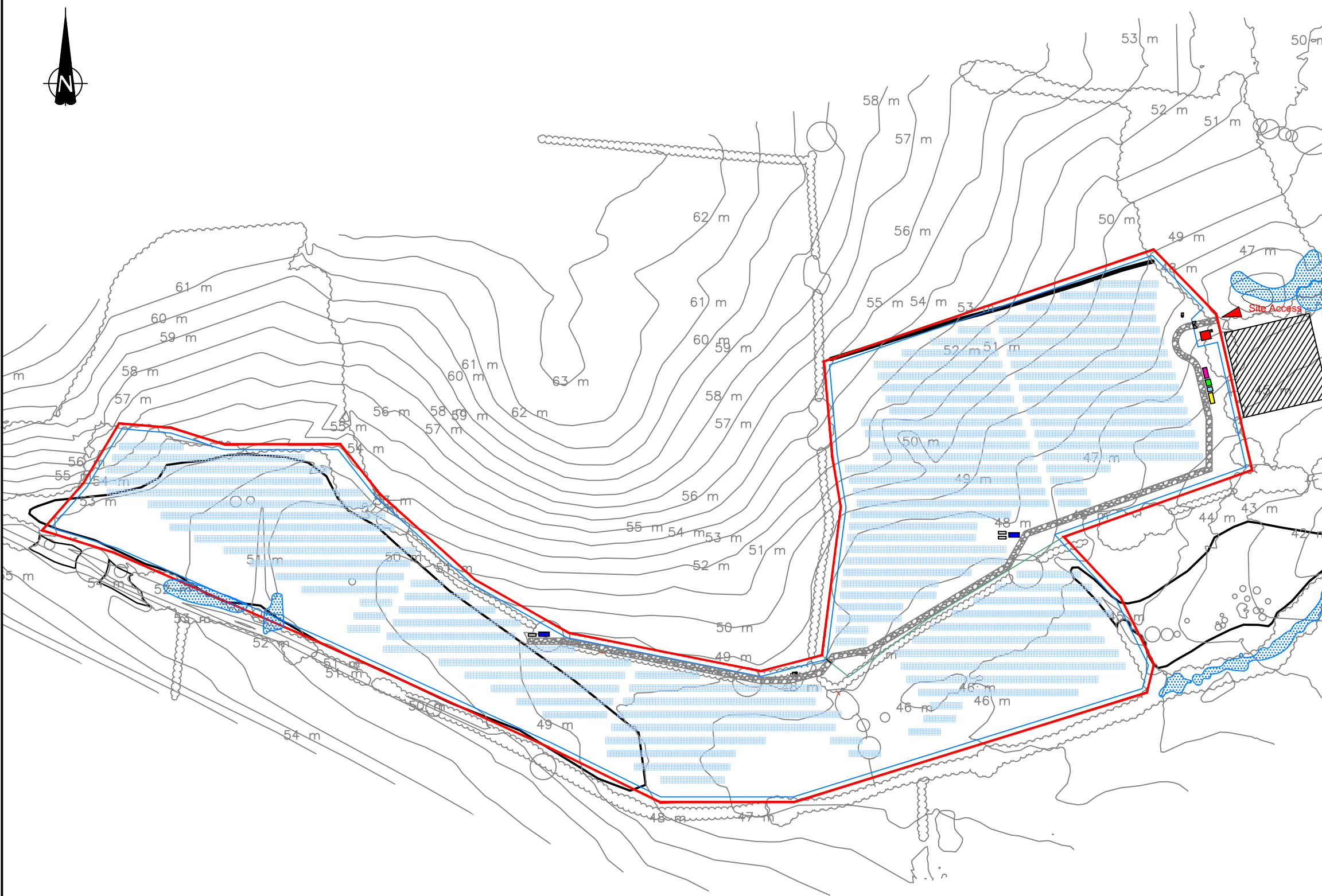
Table 1 Landscape character factors

Factor	Increased chance that solar parks can be accommodated in the landscape	Reduced chance that solar parks can be accommodated in the landscape
Landform (also related to visual factors such as elevation and viewing angle)	Absence of strong topographical variety. Featureless, convex or flat.	Presence of strong topographical variety or distinctive landform features
Landscape pattern and complexity	Simple, regular or uniform	Complex, rugged and irregular
Settlement and man-made influence	Presence of contemporary structures, for example, utility, infrastructure or industrial elements. Presence of roads and tracks in the landscape	Absence of modern development, presence of small scale, historic or vernacular settlement, roads and tracks
Inter-visibility with adjacent landscapes	Little inter-visibility with adjacent sensitive landscapes or viewpoints	Strong inter-visibility with sensitive landscapes. Forms an important part of a view from sensitive viewpoints
Perceptual aspects (sense of remoteness, tranquillity)	Close to visible signs of human activity and development	Physically or perceptually remote, peaceful or tranquil

DRAWINGS



CLIENT	Lightsource Renewable Energy Ltd	DRG No.	PE10552-001	SCALE	1:20000	DATE	10/07/15
PROJECT	Erlas Farm Solar Project	DRAWN BY	DR	CHECKED BY	BRG	APPROVED BY	JG
DRAWING TITLE	Location Plan	 your earth our world					



KEY

SURFACE WATER FLOOD RISK (ENVIRONMENT AGENCY RISK OF FLOODING FROM SURFACE WATER MAP)

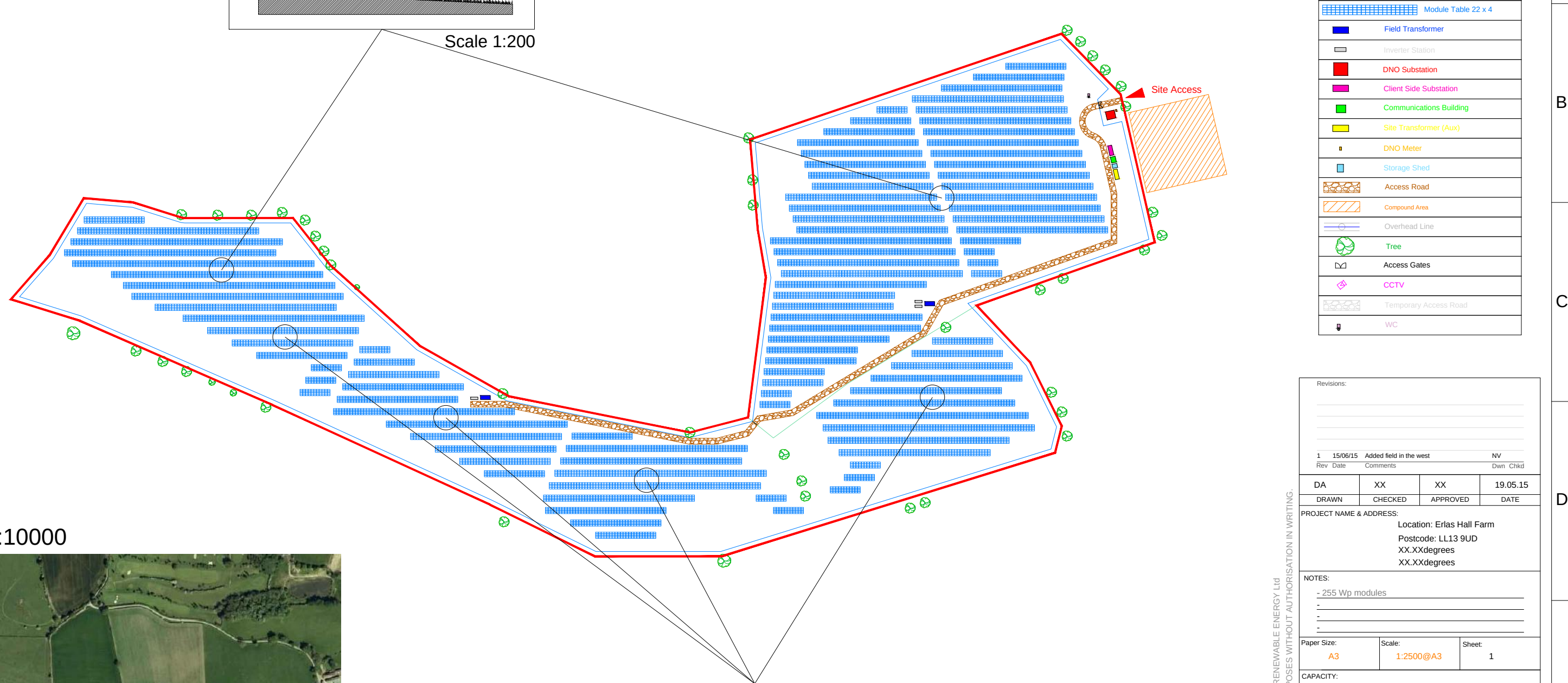
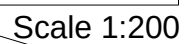
A	First Issue	14/07/15	SJB	BRG	JG
REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
CLIENT	Lightsource Renewable Energy Ltd				
PROJECT	Erilas Farm Solar Project				
DRAWING TITLE	Surface Water Flood Risk				
DRG No.	PE10552-002	SCALE	1:2500	DATE	03/07/15
DRAWN BY	DR	CHECKED BY	BRG	APPROVED BY	JG
☒ STOKE-ON-TRENT (HEAD OFFICE)	TEL 0845 111 7777	☐ CARDIFF	TEL 029 2072 9191		
☐ NEWCASTLE UPON TYNE	TEL 0191 232 0943	☐ LEIGH	TEL 01942 260101		
☐ WEST BROMWICH	TEL 0121 580 0909	☐ SHEFFIELD	TEL 0114 245 6244		
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		☐ TAUNTON	TEL 01823 703100		

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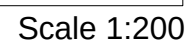
Area 87,282 m² (21.57 acres)

	Site Boundary
	Site Access
	Security Fence
	Field Boundary
	Module Table 11 x 4



	Site Boundary
	Site Access
	Security Fence
	Field Boundary
	Module Table 11 x 4
	Module Table 22 x 4
	Field Transformer
	Inverter Station
	DNO Substation
	Client Side Substation
	Communications Building
	Site Transformer (Aux)
	DNO Meter
	Storage Shed
	Access Road
	Compound Area
	Overhead Line
	Tree
	Access Gates
	CCTV
	Temporary Access Road
	WC

Scale 1:10000



Revisions:			
1	15/06/15	Added field in the west	NV
Rev Date		Comments	Dwn Chkd

DA	XX	XX	19.05.15
DRAWN	CHECKED	APPROVED	DATE

PROJECT NAME & ADDRESS:

Location: Erlas Hall Farm
 Postcode: LL13 9UD
 XX.XXdegrees
 XX.XXdegrees

NOTES:

- 255 Wp modules

-

-

-

Paper Size:	Scale:	Sheet:
A3	1:2500@A3	1

CAPACITY:

17,732_Modules
4.5216 MWp

DRAWING TITLE:

Erlas Hall_Proposed_Layout_Rev01

DRAWING NUMBER: EHF_01_Rev01	STATUS: Preliminary
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SWITCHING ON SUNLIGHT

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