Sequential Site Selection Report

Land near the Village of Redwick, south east of Newport, Wales on the Caldicot Levels

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Version History

Version	Date	Amendments
1	28th September 2020	Internal Issue Review
2	9th October 2020	Review by Ben Lewis
3	19th October 2020	Review by Colin Ramsay and Kelly Norman

Contents

1 Introduction

1.1.1 On behalf of our client, Rush Wall Solar Park Limited ("the applicant"), this sequential site assessment has been prepared to support an application for the installation of a Solar PV development with an approximate design capacity of 75MW at land adjacent to and south of Rush Wall, Redwick, Newport ("the application site").

1.1.2 The proposal aims to provide the UK with further clean renewable energy in line with the Government's Clean Growth Strategy[1]. The project is classified as a 'Development of National Significance' (DNS) as it exceeds the threshold of 10MW generation capacity and will eventually be processed by the Planning Inspectorate in line with the Development of National Significance Legislation[2].

1.1.3 In accordance with the Environmental Impact Assessment (EIA) Regulations[3] the applicant is required to provide an Environmental Statement (ES) as part of the DNS application. The EIA Regulations require that an ES should include 'a description of the reasonable alternatives studied by the applicant or appellant which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects'. (Schedule 4 (2)).

1.1.4 Planning policy prioritises the use of previously developed land and rooftops, followed by low grade farmland which is not 'best and most versatile' (grade 3b, 4 and 5) and finally and least preferably high quality farmland (grades 1, 2 and 3a). Applicants must demonstrate how the chosen site has been selected with reference to these criteria in order to demonstrate that the chosen site is 'sequentially preferable' having regard to the order of priority set out above.

1.1.5 The purpose of this assessment is therefore to identify sequentially preferable sites and then assess each site in terms of suitability, availability and viability.

1.1.6 The Sequential Site Selection Report is structured as follows:

- Section 2 – Background and Development Proposals
- Section 3 – Planning Policy, Case Law and Assessment Methodology
- Section 4 – Identified Sequential Sites and Assessment
- Section 5 - Conclusions

[1] HM Government Clean Growth Strategy – Leading the way to a low carbon future (2017)
[2] The Developments of National Significance (Wales) Regulations 2016
[3] The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017

2 Background and Development Proposals

2.1 Site and Surrounding Area

2.1.1 The application site is located to the south of Rush Wall and forms part of the Gwent levels in the south Wales and lies within the Redwick Community and the Newport City Council Local Authority area. The site's easternmost boundary adjoins the border with Monmouthshire County Council.

2.1.2 The Gwent Levels are a distinctive topographic zone which comprises of a low-lying, flat and expansive coastal plain extending to the Severn Estuary.

2.1.3 The site is bounded to the north by greenfield land and the A4810, to the east by greenfield land and Ynys Mead Reen and an access track beyond, to the south by greenfield land and Green Street and to the west by greenfield land and a row of trees.

2.1.4 The site is located less than a kilometre north of the centre of Redwick village and just over one kilometre from the banks of the Severn Estuary.

2.2 Land Use

2.2.1 The site is currently in agricultural use and is made up of irregular shaped fields which vary in size and in total cover an area of over 100 hectares as shown by the Field Number Plan which accompanies the DNS application.

2.2.2 The fields on site are bordered by drainage channels (reens) or agricultural ditches, situated adjacent to or in between hedgerows. The farmland is drained by the reen system, within which water flows slowly towards the Severn Estuary. The level of reens is controlled by means of a series of sluices; separate boards in which may be raised or lowered to keep water levels high enough for livestock to drink.

2.2.3 The main reens on the site or adjacent to the site are the Ynys Mead Reen, Cockenten Reen, Longlands Reen, Blackwall West Reen and Rush Wall South Reen (Figure 2-2). These are cleared annually by Natural Resources Wales (NRW). As such, NRW requires access to these reens at all times in order to carry out this maintenance. The farm maintains the other reens on the site, mainly to remove vegetation (such as hedge trimmings).

2.2.4 The site is traversed east-west by three sets of overhead lines and their associated pylons. These overhead lines connect to a substation approximately 5 kilometres to the east.

2.2.5 The farmland on which the site is located belongs to Longlands Farm, comprising a dairy herd which is housed indoors year-round. Grass and maize are grown on a two to three-year field rotation and used as feed for the herd of 500 cows. Maize is cropped annually, and the grass is harvested six times per year on average. The young cattle also graze some of the fields.

2.2.6 Adjacent to the western site boundary there are three dwellings and the farmyard. Two of the three dwellings are owned and occupied by the farm owners. The dwelling adjacent and to the west of the farmyard, is not owned by the farm. The farmyard includes buildings to house livestock, machinery and feed, areas of hardstanding, silage storage and a slurry silo (Figure 2-4). Caravans are stored just to the north of the farm buildings on an area of compacted gravel. These areas are accessed by a short single-track tarmac road with two passing places (Longlands Lane), off North Row.

2.2.7 There is a single operational wind turbine (named 'Longlands Lane Wind Turbine) on land adjacent to the site and to the north west.

2.3 The Proposed Development

2.3.1 This report accompanies a DNS application for the development of a solar park with an approximate design capacity of 75MW. The solar park would comprise:

- Solar photovoltaic (PV) panels, mounted on a railing sub structure;
- 19 inverter stations;
- Compacted gravel tracks (constructed on a sub layer geogrid membrane) to allow vehicular access between fields;
- A substation access track with a cement based top layer (a statutory requirement of the electricity distribution network operator, Western Power Distribution (WPD));
- Fencing and gates to enclose the panels within each field;
- Security and monitoring CCTV mounted on posts within each field;
- Underground cabling to connect the panels to the substation;
- A substation within a security-fenced concrete-based compound measuring approximately 50x40m at the centre of the site adjacent to an existing pylon. A T-off connection (an overhead wire) would provide the point of connection from the substation to the existing 132kV pylon on site. A 10m high single pole communications antenna may be required at the substation;
- Welfare Unit (1/2 shipping container) – sheltered area for operators to use while on site (no running water or toilet facilities); and
- Spares container (full size shipping container)

2.3.2 The solar panels and associated infrastructure would occupy an area as shown by the Proposed Layout Plan (Drawing no. 1578-0201-00) which accompanies the DNS application. The area of the site within the fenced area containing the solar panels and the total site area within the 'red line' planning application boundary are shown on the Site Layout Plan (Drawing no. 1578-0200-00).

2.3.3 Solar panels convert sunlight to electrical energy. They generate direct current (DC) that is converted by the inverter hardware to alternating current (AC) that can be used by the electricity grid. PV systems are rated for capacity in watts (or KW / MW) with the designated 'peak' (e.g. KWp, MWp). The peak capacity of individual panels is established by measuring their performance under internationally recognised standard conditions that include temperature and wavelength of sunlight. The actual output of a system will be determined by latitude, local weather and site conditions.

2.3.4 The development requires a site of around 85 hectares, whilst the wider site ownership area is circa 107 hectares. In order to accommodate an energy generation project of this scale, a large area of suitable land is required. A project of this scale and the area of land it necessitates is required to achieve a critical mass of energy generation to ensure its viability without Government subsidies.

3 Planning Policy

3.1 Introduction

3.1.1 This section summarises the planning policies of relevance to the proposed development and the application site. It refers to Government strategies, national planning policy, practice guidance, local plan documents and technical advice notes.

3.1.2 At the national level, Planning Policy Wales Edition 10 (PPW) (December 2018), Practice Guidance and a number of supplementary Technical Advice Notes (TANs) are relevant considerations. The Future Wales: The National Plan 2040 (September 2020 Version) is currently at draft stage and will constitute the Country's First 'National Development Framework' (NDF) once adopted, likely in February 2021. PINS has confirmed that appointed Inspectors will consider the implications of the Draft NDF for ongoing cases. The relevant considerations are also therefore set out below.

3.1.3 Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that an application for planning permission should be determined in accordance with the Development Plan, unless material considerations indicate otherwise. On this basis, The Newport Local Development Plan 2011 – 2026 (January 2015) ("Local Plan") and the related Supplementary Planning Guidance (SPG) constitute the statutory development plan against which the proposals must accord. Despite the application being made as an DNS, this legislation establishes the primacy of the development plan in the determination of the planning application.

3.2 National Level Commitments, Planning Policy and Practice Guidance

3.2.1 The European Union[4] set legally binding targets for the amount of energy which is generated from renewable sources. On this basis of this requirement, the UK Government committed to supplying 15% of its energy from renewable sources by 2020.

3.2.2 In order to meet this target, Department of Energy and Climate Change (DECC) published the UK Renewable Energy Roadmap (2011), which set out a number of actions to accelerate renewable energy generation in the UK. Following the publication of this document, there was a surge in the growth of the solar PV industry, which was acknowledged within the updated Energy Roadmap 2013.

3.2.3 This growth led DECC to create a Solar PV Strategy Group and prepare a specific Solar PV Strategy Roadmap. The strategy was published in two parts, the first in October 2013 and the second in April 2014. Part One established the general principles and vision for the solar industry, whilst Part Two set out the ambitions in relation to each market area, including large-scale ground mounted schemes.

3.2.4 The Solar PV Strategy Group is comprised of 5 'Task Forces', which relate to the key issues facing the industry and comprise: Land Use, Engagement, Grid, Innovation and Finance. These issues relate to the main constraints faced when seeking to deploy solar PV and Part Two of the Solar PV Strategy Roadmap is reflective of the on-going work of these five Task Forces.

3.2.5 The Land Use Task Force is chaired by the National Farmers' Union (NFU) who have worked with the Solar Trade Association (STA) to develop "10 Commitments" of good practice in solar farm development. These are recognised as a set of industry best practice guidelines to ensure the quality of solar farms built and managed in the UK. These state that developers should seek to fulfil the following duties:

1) Focus on non-agricultural land or land which is of lower agricultural quality
2) Be sensitive to nationally and locally protected landscapes and nature conservation areas and we welcome opportunities to enhance the ecological value of the land

[4] European Union (EU) 2020 Climate Change and Energy Package

3) Minimise visual impact where possible and maintain appropriate screening throughout the lifetime of the project managed through a Land Management and/or Ecology Plan
4) Engage with the community in advance of submitting a planning application, including seeking the support of the local community and listening to their views and suggestions
5) Encourage land diversification by proposing continued agricultural use or incorporating biodiversity measures within our projects
6) Do as much buying and employing locally as possible
7) Act considerably during construction, and demonstrate 'solar stewardship' of the land for the lifetime of the project
8) Offer investment opportunities to communities in their local solar farms where there is local appetite and where it is commercially viable
9) Commit to using the solar farm as an educational opportunity, where appropriate
10) At the end of the project life, return the land to its former use

3.2.6 The supporting note to these guidelines confirms that ground-mounted solar schemes should:

Ideally utilise previously developed land, brownfield, contaminated land, industrial land and preferably agricultural land of classification 3a, 3b, 4, and 5 (in most instances avoiding use of the 'Best and Most Versatile' cropland where possible). Land selected should aim to avoid affecting the visual amenity of landscapes, maintaining their natural beauty, and should be predominantly flat, well screened by hedges, tree lines, etc., and not unduly impact upon nearby domestic properties or roads.

3.3 Energy Wales: A Low Carbon Transition (March 2012)

3.3.1 This document highlights the principles of delivering energy policies in Wales, with the aim to 'create a sustainable, low carbon economy for Wales'.

3.3.2 Specifically in relation to the delivery of renewable energy, the document states the following:

Making the best use of commercially proven renewable energy sources – such as onshore and offshore wind, solar, bio-energy and hydro - we want to facilitate appropriate deployment to deliver against our low carbon objectives, contribute to wider UK and EU aims and realise the significant wealth-generating opportunities Wales has.

We want to ensure that following best practice engagement of our communities, the appropriate technology is deployed at the appropriate sites in a way that delivers for business, benefits communities and supports the long-term prosperity of Wales. In so doing we expect to achieve an energy mix across energy sectors and different scales – with greater contributions from micro and community scale developments alongside developments at a larger scale.

3.4 Future Wales: The National Plan 2040 (Working Draft National Development Framework Document: September 2020 Version) (Draft NDF)

3.4.1 Once adopted, this document will constitute the Country's First 'National Development Framework'. It is understood that the Draft NDF will be before the Senedd for 90 days (from 21st September 2020) and should be published / adopted in February 2021. PINS has confirmed that appointed Inspectors will consider the implications of the Draft NDF for ongoing cases. The relevant considerations are therefore set out below.

3.4.2 The document identifies Wales 2020 to 2040 Challenges and Opportunities and under renewable energy it highlights the ability for Wales to become a world leader in renewable energy technologies and identifies the potential for solar generation. It then states:

Our support for both large and community scales projects and our commitment to ensuring the planning system provides a strong lead for renewable energy development, mean we are well placed to support the renewable sector, attract new investment and reduce carbon emissions.

3.4.3 The Draft NDF sets out strategic and spatial choices which make up the Future Wales' spatial strategy. Policy 17 (Renewable and Low Carbon Energy and Associated Infrastructure) includes the following:

The Welsh Government strongly supports the principle of developing renewable and low carbon energy from all technologies and at all scales to meet our future energy needs. In determining planning applications of renewable and low carbon energy development, decision-makers must give significant weight to the need to meet Wales' international commitments and our target to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency. Applications for large-scale wind and solar will not be permitted in National Parks and Areas of Outstanding Natural Beauty and all proposals should demonstrate that they will not have an unacceptable adverse impact on the environment.

3.4.4 Policy 18 (Renewable and Low Carbon Developments of National Significance) states:

Proposals for renewable and low carbon energy projects (including repowering) qualifying as Developments of National Significance will be permitted subject to policy 17 and the following criteria:

1) *Outside of the Pre-Assessed Areas for wind developments and everywhere for all other technologies, the proposal does not have an unacceptable adverse impact on the surrounding landscape (particularly on the setting of National Parks and Areas of Outstanding Natural Beauty);*
2) *The proposal is designed to minimise its visual impact on nearby communities and individual dwellings, and the cumulative impact of the proposal, with other existing or proposed development, is acceptable;*
3) *There are no adverse impacts on international and national statutory designated sites for nature conservation (and the features for which they have been designated), protected habitats and species;*
4) *The proposal includes biodiversity enhancement measures to provide a net benefit for biodiversity;*
5) *There are no unacceptable adverse impacts on statutorily protected built heritage assets;*
6) *There are no unacceptable adverse impacts by way of shadow flicker, noise, reflected light, air quality or electromagnetic disturbance;*
7) *There are no unacceptable impacts on the operations of defence facilities and operations (including aviation and radar) or the Mid Wales Low Flying Tactical Training Area (TTA-7T);*
8) *There are no unacceptable adverse impacts on the transport network through the transportation of components or source fuels during its construction and/or ongoing operation;*
9) *The proposal includes consideration of the materials needed or generated by the development to ensure the sustainable use and management of resources;*
10) *There are acceptable provisions relating to the decommissioning of the development at the end of its lifetime, including the removal of infrastructure and effective restoration.*

3.4.5 The Draft NDF also confirms that:

The Welsh Government's policies on Developments of National Significance focus on renewable and low carbon energy schemes as it is anticipated that these will be the most common schemes coming forward for consideration in the period of the first plan.

3.4.6 The Draft NDF is very clear of its support for solar projects outside of National Parks and Areas of Outstanding Natural Beauty and states:

We recognise landscapes across Wales whose intrinsic value should be protected from inappropriate development. Sites in National Parks and Areas of Outstanding Natural Beauty are considered unsuitable

for large-scale wind and solar. Outside of these areas a positive policy framework exists [subject to Policy 18].

3.4.7 The site falls within the South East Region and the Draft NDF states:

It is vital that the region plays its role in decarbonisation and supports the realisation of renewable energy. Policies 17 and 18 set out Future Wales' approach to renewable energy generation across Wales. There is strong potential for wind, marine and solar energy generation and Strategic and Local Development Plans should provide a framework for generation and associated infrastructure. The Welsh Government wishes to see energy generation, storage and management play a role in supporting the South East economy.

3.5 Planning Policy Wales

3.5.1 Planning Policy Wales Edition 10 (PPW) sets out the national tier of land use planning policies for Wales and is supplemented by a series of Technical Advice Notes (TANs).

3.5.2 Paragraph 5.7.4 of PPW states that "the Welsh Government is committed to delivering the outcomes set out in Energy Wales: A Low Carbon Transition".

3.5.3 Paragraph 3.39 states that "previously developed land should, wherever possible, be used in preference to greenfield sites where it is suitable for development".

3.5.4 Paragraph 3.55 explains that development plan policies and development management decisions should give considerable weight to protecting agricultural land of grades 1, 2 and 3a from development, because of its spatial importance.

3.5.5 Paragraph 5.9.16 relates to the development management of renewable energy developments and sets out criteria which Local Planning Authorities (LPAs) should consider when determining such applications. This includes:

- The contribution a proposal will make to meeting identified Welsh, UK and European targets, including the contribution to cutting greenhouse gas emissions;
- The wider environmental, social and economic benefits and opportunities from renewable and low carbon energy development;
- The impact on protected landscape, biodiversity and historical designations and buildings;
- The need to minimise impacts on local communities, such as from noise and air pollution, to safeguard quality of life for existing and future generations;
- The capacity of, and effects on the transportation network;
- Grid connection issues where renewable (electricity) energy developments are proposed; and
- The impacts of climate change on the location, design, build and operation of renewable and low carbon energy development. In doing so, consider whether measures to adapt to climate change impacts give rise to additional impacts.

3.5.6 Paragraph 5.9.19 states that "developers for renewable and low carbon energy developments should, wherever possible, consider how to avoid, or otherwise minimise, adverse impacts through careful consideration of location, scale, design and other measures".

3.6 Technical Advice Notes

3.6.1 The Planning Policies set out within Planning Policy Wales are supplemented by a series of topic based Technical Advice Notes (TANs), which provide detailed planning advice on specific matters.

3.6.2 TAN 6 Planning for Sustainable Rural Communities provides guidance on the role of the planning system in supporting the delivery of sustainable rural communities.

3.6.3 Paragraph 3.7.2 states that many economic activities can be sustainably located on farms and that the production of non-food crops and renewable energy, are likely to be appropriate uses.

3.6.4 TAN 8 Renewable Energy provides guidance on land use planning in relation to onshore renewable energy technologies and how renewable energy should be accounted for as part of development plans, development management and monitoring processes.

3.6.5 TAN 8 does not make specific reference to the deployment of ground-mounted solar PV and instead focuses on roof-top installations. In this respect, the advice note is somewhat out of date and does not provide a useful source of planning policy guidance in relation to ground-mounted solar PV.

3.7 Practice Guidance: Planning for Renewable and Low Carbon Energy – A Toolkit for Planners

3.7.1 The Welsh Government commissioned the preparation of the practice guidance document ("Toolkit"), in order to support local authorities in planning for the development required to meet energy and emissions targets.

3.7.2 Although this document is predominantly focused on how a local authority can prepare a robust evidence base to underpin Local Plan spatial policies that can facilitate the deployment of renewable and low carbon energy systems, the guidance does confirm that the Local Authorities have several key roles to play that can facilitate the use and generation of renewable and low carbon energy including development management. In this regard, it confirms:

Taking decisions on planning applications submitted to the Local Planning Authority for development; as well as preparing Local Impact Assessments for schemes which are determined by the Planning Inspectorate.

3.7.3 In order to assist LPAs to plan for the deployment of renewable and low carbon energy systems, the Toolkit provides a methodology for LPAs to follow in order to identify and allocate areas for potential PV Farm projects. This methodology is intended to enable the undertaking of a high-level assessment of the potential capacity ground-mounted PV considering the constraints presented by a range of land-based designations (constraints mapping).

3.7.4 The Toolkit notes that there is currently no standard agreed method to constraints mapping for solar PV farms. As a result, the Toolkit represents only one potential approach which is not enshrined within planning policy, and neither is this binding to the Local Authorities using the guidance.

3.7.5 The Toolkit is intended to enable a visual overview of potential site locations which are in general terms less 'constrained' than other locations in the plan area. It acknowledges that the process of constraints mapping will not automatically identify sites which are suitable for the deployment of PV and that consideration of a wider range of factors will be required in order to determine such suitability. Indeed, the guidance explains that:

- *… "detailed assessment of a particular site may reveal proposed PV farm impacts to be manageable and to meet regulatory and policy requirements*
- *Conversely, land indicated as suitable through GIS mapping may prove to be technically and/or financially unviable"*

3.7.6 The limitations noted above are due to the specific challenges of solar PV farm development and the range of additional considerations which are not included within the Toolkit's proposed methodology for a high-level assessment. The guidance notes that such additional considerations include the requirement for an economically viable (relatively short distance from the solar array to an appropriate connection point) grid

connection, practical access to sites required for development, landowner willingness for development to proceed, and the likely impact on landscape character.

3.8 Newport Local Development Plan 2011 - 2026

3.8.1 The site is unallocated by the Newport Local Development Plan 2011 – 2026 (January 2015) Proposals Map. However, it does designate the site as countryside, within an archaeologically sensitive area, an undeveloped coastal zone and a special landscape area. In addition, the Newport Local Development Plan 2011-2026 (January) Constraints Map designates the site as a Site of Special Scientific Interest (SSSI). Both Local Plan policies which relate to these designations and other relevant thematic policies are set out below.

3.8.2 Policy CE10 [Renewable Energy] confirms that renewable energy schemes will be "considered favourably, subject to there being no over-riding environmental and amenity considerations." Furthermore, it states that "large scale proposals may be more appropriately located outside of the defined settlement boundary if no appropriate brownfield site exist" and that the "cumulative impacts of renewable energy schemes will be an important consideration".

3.8.3 Paragraph 4.51 of the supporting text confirms that particular care should be taken when assessing proposals for renewable energy projects in sensitive, designated areas, such as areas of high landscape quality, and areas of nature conservation, or archaeological or historical importance.

3.8.4 It goes on to set out that:

The Gwent Levels are recognised as an internationally important resource in terms of landscape and heritage and nationally important for ecology. Proposals which affect the special qualities of the Gwent Levels, or any other protected site, will be resisted unless it can be demonstrated that there will be no significant adverse effects.

3.8.5 Paragraph 4.55 confirms that:

Brownfield sites within the settlement boundary will be favourably considered and where possible, should be considered before greenfield options.

However, it also goes on to state:

Development of larger scale renewable energy schemes may be acceptable on greenfield sites where it can be demonstrated that there will be no significant adverse impacts on the environment and local communities.

3.8.6 In accordance with the planning guidance set out within the Toolkit, the Council has undertaken a Renewable Energy Assessment, details of which can be found below. This sets out the potential for renewable energy resources and technologies within the plan area. The Development Plan states that this assessment should be considered when evaluating renewable energy proposals.

3.8.7 The site also lies within the Gwent Levels area of the 'Undeveloped Coastal Area'. Policy CE9 is therefore relevant and it states:

i. In the undeveloped coastal area such development is required to be on the coast to meet an exceptional need which cannot reasonably be accommodated elsewhere;

ii. the area is not itself at risk nor will the proposed development exacerbate risks from erosion, flooding or land instability

3.8.8 Paragraph 4.45 of the supporting text explains that the undeveloped coastal area will:

Rarely be appropriate for major development. Proposals for such development will need to demonstrate that such a location is essential, and that the proposal is acceptable having regard to other Policies of this Plan. Sufficient information will be required to demonstrate that the proposed development can be carried out without significant adverse effects.

3.9 Renewable and Low Carbon Energy Assessment: Torfaen County Borough Council and Newport City Council

3.9.1 A joint study into the potential for the deployment of low carbon energy in Newport and Torfaen was completed in 2013. The study provides an evidence base for the two local authorities and underpins the pertinent local planning policies which relate to renewable energy generation (Policy CE10 within the Newport Local Plan).

3.9.2 The study provides an understanding of local renewable resources, constraints and opportunities, and to identify opportunities to include renewable energy schemes, district heating and combined heat and power into development proposals. However, it is explained within the document that:

The spatial elements of this study are not intended for use by development management officers to assess individual planning applications for either strategic new development sites that are incorporating renewable energy, or for stand-alone renewable energy generating systems. Further detailed survey work would need to be undertaken to assess development potential and viability.

3.9.3 The study forms an assessment of the potential for ground mounted PV, based upon a GIS analysis of the following land-based constraints:

- Grade 4 and 5 Agricultural land only
- Areas of Outstanding Natural Beauty
- Nature conservation designations – Sites of Special Scientific Interest (SSSIs), Special Protection Areas of Conservation (SACs), Ramsar Sites, National Nature Reserves (NNR) and Local Nature Reserves (LNRs)
- Sites of Historic Interest – World Heritage Sites, Scheduled Ancient Monuments, Registered Parks and Gardens
- Common Land
- 5m Buffer Zones around rights of way

3.9.4 The outcome of this analysis for the Newport area has been provided in map format. This shows areas which are considered to possess technical potential for ground-mounted PV based upon the GIS analysis of the abovementioned 'constraints'. The site does fall within an area of 'constraints'.

3.9.5 It is important to note that the mapped constraints present only a basic and high-level representation of the areas which are least constrained by the above designations. Indeed, the study itself acknowledges that only a small proportion of the total available land would actually be suitable.

3.9.6 Therefore, it assumes that only 1% of the unconstrained land could be used for the deployment of solar PV. It goes on to explain that although this is a somewhat arbitrary figure, it is deemed to reflect the various other constraints, which will further influence the potential of the land. These include the fact that solar farms will have to compete with other land uses, need an economic grid connection and will require unshaded flat land or land inclined to the south.

3.10 Relevant Statutory Designations

3.10.1 The site lies within an area that is subject to the following designations, which are explained in more detail below:

1) Within a Site of Special Scientific Interest (SSSI)
2) Within the Gwent Levels Historic Landscape of Outstanding Historic Interest in Wales

SSSI Designations

3.10.2 The site falls within the Redwick and Llandevenny SSSI. The boundary for this is shown below in Figure 1.

3.10.3 The Countryside Council for Wales (CCW) (now part of Natural Resources Wales (NRW)) has released guidance to explain the special features of these SSSIs. Within the "Site of Special Scientific Interest Citation", the Redwick and Llandevenny SSSI has three features of special interest which are as follows:

- Reen and ditch habitat
- Insects and other invertebrates
- Shrill Carder Bee

3.10.4 In addition to these features, the SSSI is noted to comprise other habitats that contribute to the special wildlife interest in the areas. These include hedgerows and flower rich ditch banks which are important for a wide range of species.

3.10.5 It is explained within the related guidance documents that CCW (now part of NRW) are working with the Council, developers, owners and other relevant bodies "to ensure that where development does take place the special interests of the SSSI are conserved and enhanced".

3.10.6 Paragraph 3.24 of the supporting text to Local Plan Policy GP5 (General Development Principles – Nature Conservation) sets out that SSSI sites "will require the fullest regard to the intrinsic value of the site and their nature conservation value. Development with the potential to affect a recognised site will be closely scrutinised for any direct or indirect effects. The developer must demonstrate the case for development and why it could not be located on a site of less significance for nature conservation".

Gwent Levels Historic Landscape in Wales

3.10.7 The site lies within the Gwent Levels Historic Landscape Area as shown on Figure 1 as designated under the Register of Landscapes, Parks and Gardens of Outstanding Historic Interest in Wales.

3.10.8 The area comprises discrete and extensive areas of alluvial wetlands and intertidal mudflats and represent a hand-crafted landscape having been recurrently inundated and reclaimed form the sea since the Roman period. The areas have distinctive patterns of settlement, enclosure and drainage systems belonging to successive periods of use.

3.10.9 This area is broken down in 21 'character areas' which reflect the locally distinctive features within the area as shown on Figure 1 below.

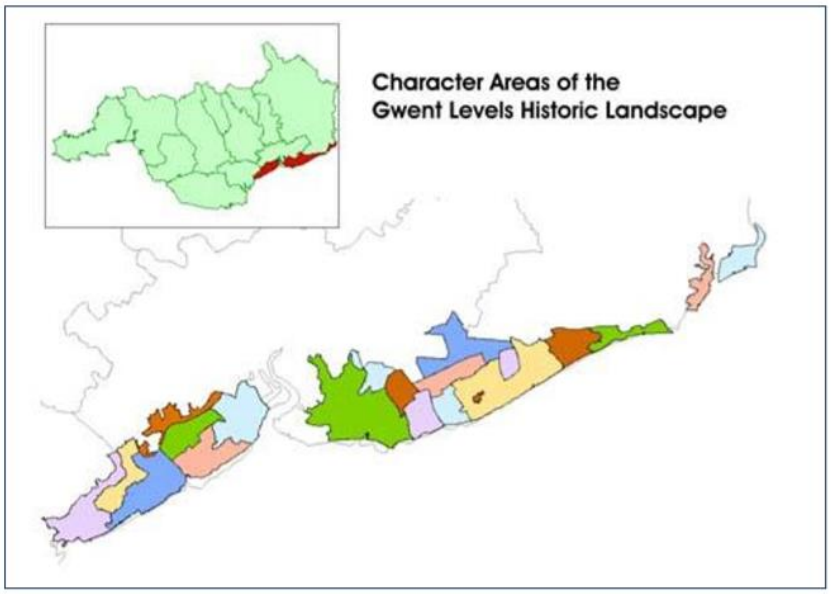

Figure 1: Gwent Levels Historic Landscape Area

3.10.10 The application site appears to fall within the Redwick / Magor / undy and Magor Lower Grange character areas. These areas are described within the Historic Landscape Character record and are briefly characterised as follows:

Redwick/Magor/Undy: Complex “irregular landscape” with some dispersed settlement

Magor Lower Grange: Tintern estate, drained in the mid-thirteenth century

4 Site Selection Criteria and Assessment

4.1 Catchment

4.1.1 This report has been prepared in relation to an area east of Newport, where it has been identified that it would be possible to utilise the identified capacity within the overhead lines.

4.1.2 There is no Government guidance on what is a reasonable search area for renewable energy development sites. An appeal decision (Ref: APP/D3503/A/13/2204846) recognised that there is no policy guidance which advocates restricting searches to within a local authority's administrative area. The decision advised that each case should be considered on its own merits taking account of operational constraints.

4.1.3 Given that a renewable energy scheme of this type must achieve a viable connection to the existing grid network, it is essential that there is a connection point with sufficient capacity.

4.2 Suitable site criteria

4.2.1 The site selection process is guided by development control considerations laid out through the relevant national and local planning policy guidance as set out within Section 3 along with the operational needs and requirements of the proposed development. The site selection criteria are presented within Table 1 below.

Table 1: Site selection criteria for the proposed development

Criteria	Description
Previously developed land	The reuse of brownfield land is a planning policy requirement at both a national and local level. Consideration of this criterion involved consideration of whether a site could be categorised as previously developed land or whether it remained undeveloped (i.e. agricultural/greenfield site).
Agricultural land classification – avoiding 'Best and Most Versatile agricultural land	Planning Policy Wales encourages local planning authorities in Wales to take account the economic and other benefits of the best and most versatile agricultural land. The intention of this policy is to limit any reductions in agricultural output resulting from new development.
A site with suitable grid connectivity	Connectivity to the grid is an essential requirement of a development of this nature. Cable trenching costs and thermal power losses limit the distance of a site from a suitable grid connection to 3km.
A site of suitable size and orientation that can accommodate the proposed development	Small to medium solar sites (i.e. under 25 MW) are not usually viable due to the removal of subsidy. In order to become viable a solar site must reach a critical mass and will therefore be larger in size, typically 40 – 50 MW. For solar schemes over 25 MW, the average site area requirement to accommodate 1MW of power is 3.7 acres (NERL). This size requirement only applies when the site is characteristically clear of obstructions (or can be made clear of obstructions) and benefits from a level or gentle sloping topography. Importantly where potential sites contain physical obstructions that cannot be removed (such as public footpaths, historical field boundaries, woodland, rivers, streams, highways etc.) the site area requirements can be significantly increased. Additionally, a site positioned on a north-facing slope would require a greater development footprint.
A suitable site that is available for the duration of the solar development's operational life	The site must be available for the duration of the proposed lifespan of the proposed energy generation project.
Statutory designations	Ability to accommodate the proposed development in this location without causing harm to the SSSI and Gwent Levels Historic Landscape of Outstanding Historic Interest in Wales statutory designations

Solar Irradiation	Coastal regions which benefit from reflected sunlight generally benefit from higher levels of solar irradiation as do locations where there is no overshadowing from buildings or trees.
Compatible neighbouring uses	Sites situated near to residential development can be problematic. Sites are therefore usually selected that retain a buffer from residential development.

4.2.2 The purpose of the alternative site search is to assess potential sites throughout the search area. An assessment against each of these criteria is provided below.

4.3 Previously Developed Land

4.3.1 As confirmed by Policy CE10 (Renewable Energy), brownfield sites should be considered first as a starting point for the location of solar farms.

4.3.2 At a national level, Wales does not record and maintain a database of brownfield or 'previously developed' land, which is different to the approach taken in England with the National Lane Use Database of Previously Developed Land (NLUD-PDL).

4.3.3 In the absence of this resource, it has been necessary to refer to an alternative data source to identify any potentially suitable brownfield land. A desktop search for brownfield sites was therefore undertaken using the Estates Gazette Property Link website. The following viable criteria were applied in order to undertake a search for applicable sites:

- Site Area – Over 100 Acres
- Within 100 miles of Redwick, Newport
- Available for rent of the lifetime of the energy project

4.3.4 The search found that only three sites meet these criteria. These are:

Site Name	Location	Site Area	Current Use / Comments
Severnbanks	Central Avenue, Avonmouth, Bristol, BS10 7SD	2 – 100 Acres	Open storage plots to let and design and build service available up to 1M sq ft
Peddimore	Land off Wishaw Lane, Minworth, Sutton Coldfield, B76 9AR	175 Acres	The site is allocated for development within B1c, B2 and B8 uses. Design and build opportunities from 70,000sq ft to 600,000sq ft
Gloucester Business Park	Hucclecote, Gloucester, GL3 4AA	276 Acres	The land is being promoted on a design and build basis to cater for requirements from 15,000 sq ft upwards.

4.3.5 Each of these sites has an end use established through the planning system and were advertised for commercial use and warehousing and distribution. In any case these were located outside of Wales and the intended search area of the sequential test.

4.3.6 Therefore, it is apparent that no suitable brownfield sites are currently being marketed through the mainstream property market.

4.3.7 A solar farm will usually generate a ground rent of between £700 and £900 per acre for the landowner. Whereas, residential land will typically generate between £350,000 per acre for low value areas and £1,000,000 per acre for higher value areas. Employment development will usually generate between

£125,000 for low value office or industrial space, £175,000 per acre for average industrial land and up to £1,500,000 per acre for retail. A table setting out benchmark figures used for the preparation of Community Infrastructure Levies (prepared by GVA) is contained in Appendix A. Where there is alternative development potential that could offer a landowner a higher return, the landowner is highly unlikely to make the land available for a solar farm when it will offer a fraction of the return from alternative uses that are usually feasible on previously developed sites.

4.4 Agricultural Land Classification

4.4.1 National level guidance on the deployment of ground-mounted solar expresses a preference to avoid the 'Best and Most Versatile' cropland where possible[5]. Grades 1, 2 and 3A of the Agricultural Land Classification are considered to be best and most versatile land, whilst 3B, 4 and 5 are not.

4.4.2 The land is indicated as grade 3 on the Provisional Agricultural Land Classification map of England and Wales (1977). This resource does not distinguish between grade 3A and 3B over the site area. Following early consultation with the Welsh Government, they confirmed that an Agricultural Appraisal to assess the land classification of the entire site would not be required and to take the predictive maps as 'best available evidence'.

4.4.3 The site therefore avoids the best and most versatile (BMV) land and accordingly the proposed development complies with national planning policy which prefers the use of poorer quality agricultural land over the use of BMV agricultural land.

4.5 Grid Connection

4.5.1 Connectivity to the grid is an essential requirement of a development of this nature. As a result, identifying a suitable area in which a grid connection can be achieved is the principal technical consideration for solar farm development.

4.5.2 The further the distance from suitable grid access a site is located, the greater the challenge of transferring generated electricity to the grid. Increased cable trenching and thermal power losses, as well as potential third party land easements increase costs dramatically and can render a project uneconomical.

4.5.3 Where a site is more than 1km from grid access, it usually makes it uneconomical. However, for the purposes of this study the site search has set out to identify sites within a 3km distance of grid access.

4.5.4 Gaining grid connection in south Wales is very difficult and problematic. Power lines in the area are congested and most are at capacity. The map at Appendix B (Western Power Distribution – DG Connections (April 2015)) shows power lines and the level of capacity which they have. Red lines denote 132kV lines which are only viable for sites greater than 30MW in size. The Green lines are 33kV lines which are usually only viable for sites of 5MW to 30MW in size. The only lines that can therefore be connected into are the red lines that are not highlighted in yellow or light blue (yellow and light blue denoting constraints that prohibit connection). As can be seen from the map, the area of search is therefore severely restricted due to the lack of grid capacity.

4.5.5 The area within the Gwent levels between Newport and Magor is one of the only areas of the network which provides sufficient capacity and this factor has therefore provided a starting point in the search for a suitable site location.

4.5.6 Redwick and the surrounding area also benefits from large scale electricity transmission assets which were initially installed to serve the requirements of heavy industries which once existed along this coastline but are now no longer in operation.

[5] Solar Trade Association "10 Commitments" of good practice in solar farm development

4.5.7 The ability to connect to the grid represents the most significant benefit of the proposed site and is not achievable for an energy generation project of this scale in most other locations within the plan area or even at the national level. Given that the site benefits from an on-site grid connection, the proposed development is therefore not reliant on securing access through third party land.

4.6 A suitable size and orientation

4.6.1 In order to accommodate an energy generation project of this scale, a large area of suitable land is required. A project of this scale and the area of land it necessitates is required to achieve a critical mass of energy generation to ensure its viability without Government subsidies. The site is largely unobstructed and can be developed in a manner which retains the historic field boundaries and sensitive reen habitats.

4.6.2 Very few alternative areas exist that would provide a site of sufficient scale to accommodate the proposed development. Where such areas have been identified, these have not been deliverable for other reasons, including the lack of a suitable grid connection or planning and amenity constraints.

4.7 A deliverable and accessible site

4.7.1 Having established the area's ability to accommodate the development it was then necessary to investigate whether sufficient land would be available to enable the development to proceed. In order to establish this, discussions were held with local landowners to understand their appetite to release their land for energy generation development. An in-principle agreement was reached to allow the development to take place subject to achieving all necessary consents. This therefore establishes the deliverability of the proposed development on this site.

4.8 Statutory designations

4.8.1 The ability to accommodate the proposed development in this location without causing harm to the SSSI and Gwent Levels Historic Landscape of Outstanding Historic Interest in Wales statutory designations is discussed below.

4.8.2 The Redwick and LLandevenny SSSI within which the site is located is recognised for the following features:

- Reen and ditch habitat
- Insects and other invertebrates
- Shrill Carder Bee

4.8.3 Expert technical ecology advice has confirmed that the proposed development can be implemented without causing significant adverse impacts to these special features. Appropriate buffers zones around the site's reen habitats would be observed and independent BRE guidance[6] states that:

Solar Farms present an excellent opportunity for biodiversity. For most solar farms, the panels are set on piles and there is minimal disturbance to the ground.

4.8.4 In addition, the guidance specifically acknowledges Bumblebee populations and invertebrates. This serves to highlight the opportunity that the proposed development presents to enhance the special features of the SSSI and increase the wider biodiversity of the area. In fact, the proposed development includes the improved management of ecological features or provision of new features, resulting in a net benefit to biodiversity. Proposed enhancements include:

[6] BRE National Solar Centre: Biodiversity Guidance for Solar Developments

- Removal of shading vegetation along 190 metres of ditch, with the exposed field ditch cast ad re-connected to the drainage system;
- Buffer areas along the northern margins of two field to the east of the site will be enhanced for Shrill Carder Bee;
- Ten woodcrete bat boxes will be fitted onto trees;
- Grassland management within buffer areas will create a more diverse sward through natural succession;
- Areas of retained grassland and sown areas associated with the panels will be managed together after the first year. The intention is that areas beneath the panels will be grazed by sheep;
- Any large gaps in hedgerows will be in-filled with native hedgerow species.

4.8.5 Furthermore, the guidance set out within the Renewable and Low Carbon Energy Assessment: Torfaen County Borough Council and Newport City Council states that where development does go ahead that it is "the special interests of the SSSI" which should be conserved and enhanced. As stated above, this requirement will be wholly complied with given the provision of appropriate buffers zones around the site's reen habitats.

4.8.6 In addition, the site lies within the Gwent Levels Historic Landscape Area and specifically the Redwick/Magor/Undy and Magor Lower Grange character areas.

4.8.7 The planning application is accompanied by a full Landscape and Visual Impact Assessment (LVIA) (within the Environmental Impact Assessment) and Environmental Impact Assessment, which details the relevant impacts in relation to this designation. However, the proposed solar farm development will sit within the existing fields and will not in any way fragment the historic field pattern. The substation, welfare unit, spares container, inverter stations, fencing and gates and the panels themselves will not uncharacteristically protrude above the field scape and would thus maintain the flat open character of the landscape.

4.8.8 Considering the potential impact of the proposed development, it is not deemed that the SSSI or Historic Landscape Area designations would fundamentally restrict or prohibit this type of development and the site has thus been retained as part of the site selection process.

4.9 Solar irradiation

4.9.1 The site's open, coastal location and the fact that it is not shaded by any nearby features in the landscape make it highly suitable for this type of development.

4.9.2 The Met Office sunshine duration data for Wales (1971 - 2000) confirms that the coastal area along the Gwent levels where the site is accommodated receives very high levels of sunshine when compared to the country as a whole. This provides a clear benefit to a scheme of this nature as it results in significantly more electricity generation than at other locations. An illustration of this data can be found directly below.

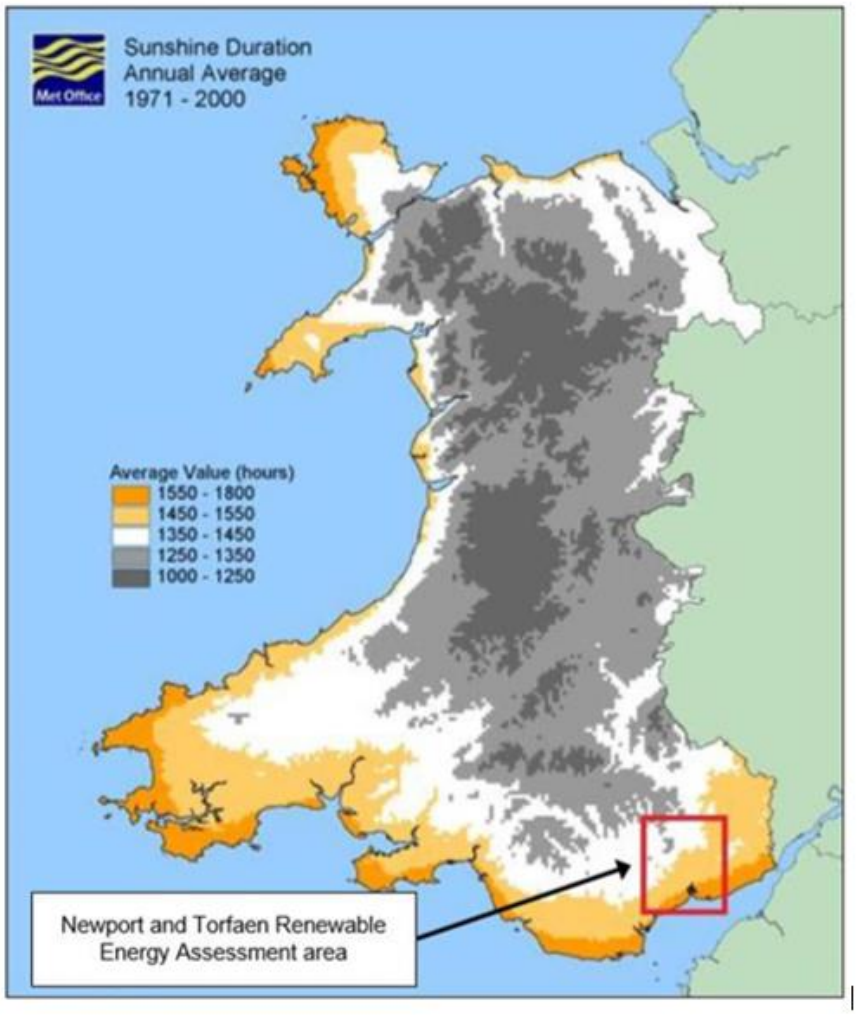

Figure 2: Met Office Average Annual Sunshine Hours 1971 - 2001

4.10 Compatible neighbouring uses

4.10.1 There is very little residential development within close proximity of the site. Redwick and other clusters of residential development close by are all at a similar level and intervening landscape features such as trees and hedgerows means that there is limited to no intervisibility from residential properties.

5 Relevant Planning Decisions

5.1 Proposed solar farm at Llanwern (3150137) – Development of National Significance (DNS) Application

5.1.1 In November 2018, an DNS application for a 49.9MW solar farm was approved by Welsh Ministers.

5.1.2 Minister Lesley Griffiths within the Welsh Government's decision letter stated the following in relation to site selection:

The Inspector considers the scheme comprises appropriate development in the countryside and therefore complies with the relevant LDP Policy. I [therefore] agree with the Inspector's conclusions and her reasoning behind them.

5.1.3 Such a decision represents a recent endorsement of development of this nature taking place within the context of the open countryside site location.

5.2 Proposed solar farm, Magor Road, Newport (APP/G6935/A/15/3034087)

5.2.1 In October 2015, the Secretary of State upheld an appeal against refusal by Newport County Council. The inspector made this decision on the basis that no suitable brownfield land was available, and this was not disputed by the LPA.

5.2.2 The application which was subject of this appeal was for a 10 MW scheme of approximately 10.4 ha (25.78 acres), which is clearly far smaller than the scheme being proposed under the current application.

6 Conclusion

6.1.1 This sequential Site Selection Report has taken a robust approach to identify sites that follow the sequential approach. The search area covers a wide search area and has been refined to take account of brownfield land and constraints, including agricultural land classification and proximity to grid connection, which is essential for the scheme to be viable.

6.1.2 It is therefore evident from undertaking this assessment that there are no existing, available, suitable or viable alternatives within the search area which meet the criteria required for a successful soar PV scheme of this scale.

6.1.3 Although the Renewable and Low Carbon Energy Assessment for Torfaen County Borough Council and Newport City Council initially identifies additional areas with potential for ground mounted Solar PV, the methodology employed oversimplifies the site-selection process and fails to acknowledge the critical issues relating to grid connectivity and land availability. Furthermore, the guidance set out within this document states that where development does go ahead that it is "the special interests of the SSSI" which should be conserved and enhanced. Appropriate buffers zones around the site's reen habitats would be observed and therefore this requirement will be wholly complied with.

6.1.4 The Future Wales: The National Plan 2040, the Country's First 'National Development Framework', is likely to be adopted in February 2021. PINS has confirmed that appointed inspectors will consider the implications of the Draft NDF for ongoing cases. This document strongly supports the principle of developing renewable and low carbon energy from all technologies and confirms that decision makers must give significant weight to the need to meet Wales' international commitments and the target to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency. It provides clear support for solar projects outside National Parks and Areas of Outstanding Natural Beauty, subject to avoiding unacceptable environmental adverse impacts as set out by Policy 18 and providing a net benefit for biodiversity. Furthermore, the Draft NDF confirms that it is vital that the South East Region plays its role in decarbonisation and supports the realisation of renewable energy.

6.1.5 The proposed development is temporary and reversible, and significant biodiversity improvements are proposed as set out in detail at Section 4.8 Statutory Designations.

6.1.6 There are only three existing brownfield sites identified within the search area, however none of these are suitable or available due to the land values associated with such sites and their potential to attract higher rental/sale values per hectare for different end uses to that of the proposed development.

6.1.7 The proposed site comprises of low quality, grade 3b and 4 agricultural land and therefore avoids the best and most versatile agricultural land.

6.1.8 The positive and negative effects of the proposed development can now be considered alongside all other material planning considerations.

Appendix A: Benchmark Land Values

Table 5.16 – Benchmark land value (for cleared sites with approvals)

Land useage	Value Area	Guide value (per acre)
Residential	Low	£350,000
	Average	£450,000
	Good	£1,000,000
Industrial	Low	£125,000
	Average	£175,000
	Good	£275,000
Office	Low	£125,000
	Average	£175,000
	Good	£300,000
Retail foodstore	Low	£1,000,000
	Average	£1,250,000
	Good	£1,500,000
Retail warehouse	Low	£500,000
	Average	£550,000
	Good	£600,000
Small retail out of town	Low	£200,000
	Average	£300,000
	Good	£400,000
Leisure	Low	£450,000
	Average	£500,000
	Good	£550,000
Student accommodation	Low	£500,000
	Average	£600,000
	Good	£700,000
Care Home	Low	£450,000
	Average	£600,000
	Good	£800,000

Appendix B: Western Power Distribution Grid