

Proposed Solar Photovoltaic Array at South Hill Farm, Bleadon, Somerset

Environmental Statement



Report by: Sally Walker BSc, AIEMA

Checked by: Rob Edwards BSc, MSc, MIEMA

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Submitted on behalf of:

Mark Dickinson

Energi Installations PLC

Prepared by:

ADAS UK Ltd

4205 Park Approach

Thorpe Park

Leeds

LS15 8GB

Tel: 0113 232 1630

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1. INTRODUCTION

1.1.1. ADAS UK Ltd. has been appointed by Energi Installations PLC to undertake an Environmental Impact Assessment (EIA) to accompany the planning application for a solar photovoltaic (PV) array at South Hill Farm near Bleadon, Somerset.

1.2 The Applicant

1.2.1. Energi Installations PLC is a developer and installer of solar energy developments. The site will be operated by a third party under lease and financial agreement with the landowner.

1.3 Screening

1.3.1. A request for a screening opinion was sought from North Somerset Council under the Town & Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999. These regulations have subsequently been replaced by the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011.

1.3.2. Circular 02/99 'Environmental Impact Assessments' (EIA) 1999 states that an installation for the production of electricity falls within the scope of 'Schedule 2' development by virtue of Section 3 'Energy Industry' Part (a). This section applies a threshold on proposals on land exceeding 0.5ha, over which screening for an EIA development is necessary.

1.3.3. The proposed site is approximately 21ha, requiring screening for an EIA. The screening opinion considered that the development would potentially have a direct impact on the setting of sensitive land, specifically a Site of Special Scientific Interest (SSSI) and an Area of Outstanding Natural Beauty (AONB) which are close to and overlook the site. The proposal is therefore regarded as an EIA development.

1.3.4. The regulations require that the developer must provide information about the likely significant environmental effects of the proposal and that

this information must be taken into account when determining the planning application. The purpose of this Environmental Statement (ES) is therefore to provide that information both to the relevant authorities and to any member of the public who wishes to be informed about the environmental issues related to the application.

1.4 Scope

1.4.1. The screening opinion sought from North Somerset Council in January 2011 determined the scope of the EIA and is included in Appendix 1.1. This states that the ES should contain:

- A description of the landscape character of the existing site and wider 'Bleadon Levels' and how the proposal will affect this character;
- A landscape/visual impact study including the effect of sunlight reflecting off the panels, examining possible effects on the SSSI and AONB;
- An ecological impact assessment;
- Drainage considerations; and
- An assessment of the temporary effects of the development.

1.4.2. Flood risk and drainage has been assessed and is detailed in a separate appended document, the Flood Risk Assessment. The Historic Environment resource is also considered in the ES but was not specifically requested by the screening opinion.

1.4.3. It is not the intention of the EIA to include information on all aspects of the environment, only those considered likely to be significantly affected.

1.5 Authorship of the Environmental Statement

1.5.1. The ES has been coordinated and produced by ADAS UK Ltd, funded by the applicant.

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- 1.5.2. This report may contain material that is not the copyright of ADAS Ltd or is the intellectual property of third parties that we are able to include for limited reproduction under the terms of our own copyright licences. Copyright itself for such material is not transferable by ADAS Ltd and you are reminded that you remain bound by the terms and conditions of the Copyright, Designs and Patents Act 1988 with regard to copying and dissemination of this report.

1.6 Obtaining Copies of the Environmental Statement

- 1.6.1. Copies of this ES and Non Technical Summary can be obtained from:

ADAS UK Ltd.
4205 Park Approach
Thorpe Park
Leeds
LS15 8GB

- 1.6.2. A charge will be made for each copy of the report provided, based on the cost of reproducing and posting the documents. The fee will be £30 for a paper copy and £5 for an electronic copy on CD.

1.7 Viewing Copies of the Environmental Statement

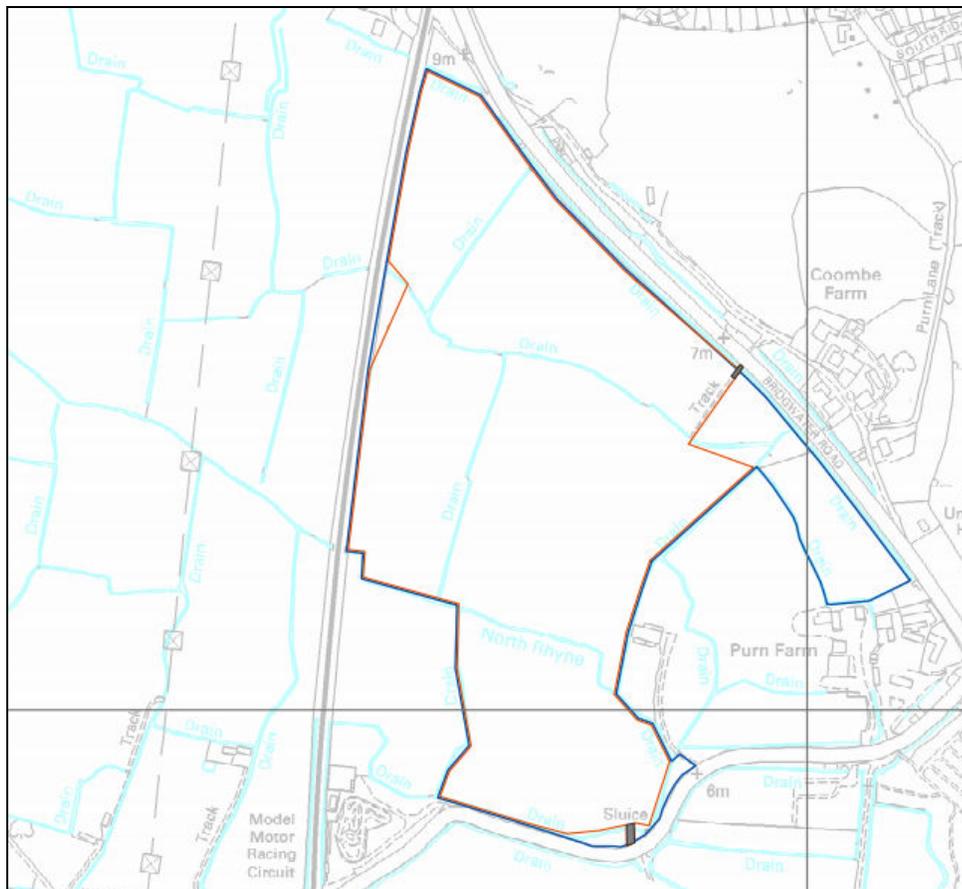
- 1.7.1. Copies of the ES may be viewed at the planning department of North Somerset Council or via the planning application pages of the North Somerset Council website.

2. THE PROPOSED DEVELOPMENT

2.1 Location and Site Description

2.1.1. South Hill Farm is located to the west of Bridgwater Road, to the north of Accommodation Road and to the east of the Weston to Highbridge railway (National Grid Reference ST 32763 57097). A location plan is provided below with a full scale version provided with the application (CEN4035_Location).

Figure 2.1: Site Location



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2.1.2. The application site is currently in use for the production of arable cereal crops.

- 2.1.3. The site was chosen for the development of solar energy as it has a sufficient area of flat open ground, a good level of solar irradiance and is free from constraints such as statutory environmental designations and overshadowing. The site also has good proximity for connection to the national grid.
- 2.1.4. The land is within an area that forms part of the Bleadon Levels and is within land defined as a coastal zone by the North Somerset Replacement Local Plan. The site is located approximately 120m west of Purn Hill SSSI, 800m east of Uphill Cliff SSSI, which is also designated as Mendip Limestone Grasslands Special Area of Conservation (SAC), and 1000m west of the Mendip Hills AONB.

2.2 Project Description

Layout

- 2.2.1. The proposed development comprises:
- Installation of approximately 32,000 solar panels, approximately 1m off the ground, with a maximum height of 3m from ground level;
 - Construction of ancillary works, including access tracks and boundary fencing with associated security features, comprising CCTV cameras and motion detector equipment;
 - Construction of temporary construction compound; and,
 - Installation of inverter/grid connection infrastructure cubicles.
- 2.2.2. The solar PV panels will be south-facing and tilted at approximately a 25° angle. The solar modules, measuring 1650mm x 992mm x 40mm, will be grouped into 'tables' consisting of 88 modules arranged in four rows of 22.
- 2.2.3. The panels will be arranged into rows in each field. The spacing of arrays at intervals optimises the use of the available land area, whilst

minimising shading of the panels. It also allows for maintenance vehicles to access the arrays.

- 2.2.4. A number of inverters will be located on the periphery of the PV arrays. The grid connection infrastructure cubicle will be situated at the southern most tip of the proposed development area.
- 2.2.5. This layout has been selected in order to make most effective use of the available space on site and to maximise use of the available solar resource.
- 2.2.6. Once the solar panels have been installed, the land could be seeded with a biodiversity grass/wildflower seed mix and used for grazing purposes.
- 2.2.7. The layout of the PV panels and ancillary development is shown in the layout plan accompanying this application (CEN4035_Layout).

Design

- 2.2.8. The proposal is for the development of a solar PV array to generate electricity, which will be fed into the national grid. Energy calculations indicate that the site has a maximum peak power capacity of 7.8 Megawatts (MWp).
- 2.2.9. The site would be seeded with a biodiversity grass/wildflower seed mix and could be co-used for sheep grazing. This will ensure that the soil structure and fertility is maintained so that the site can be restored to agriculture once the site is decommissioned.
- 2.2.10. The development will include a number of components outlined below.

Fixed Solar PV Panels

- 2.2.11. The solar PV panels convert sunlight into electrical energy. Each PV module has a peak output of approximately 245Wp. Therefore, assuming 31,680 modules, the estimated size of the PV system is approximately 7.8MWp.

2.2.12. The panels will be on a fixed system rather than a tracking system as this has reduced environmental impact and is more cost effective to install and remove. The PV module will be mounted on a steel framework system which will be pile driven into the ground. Concrete foundations will not be used in order that the panels can readily be removed and re-deployed elsewhere in the future if required and also in order to reduce capital cost.

Inverter and High Voltage Cubicles

2.2.13. Inverter units are required to convert the direct current (DC) generated by the PV panels into alternating current (AC) which can be used by the electricity grid. The inverters are fed into a transformer which converts the level of the voltage to that required for export to the grid.

Cables and Grid Connection

2.2.14. Grid connection works from the HV cubicles will be to the specification of the Distribution Network Operator (DNO) and would be armoured and laid underground in a trench, approximately 1 to 1.5m deep. The DNO has confirmed that a connection point is available and discussions are ongoing with respect to the ideal cable route.

2.2.15. Cabling will be placed underground in order to minimise visual impact. Under Class G of the Town and Country Planning (General Permitted Development) Order 1995, statutory undertakers are permitted to install an underground electric line without a planning application, subject to a number of exclusions and conditions. Given that the electricity connection would need to be adopted by the DNO, it is anticipated that the connection works would fall into this category and would not require a planning application.

2.2.16. The precise grid connection route would not be determined until the site gains planning permission as it is only at that stage that a firm grid offer can be obtained from the DNO. Grid connection works therefore do not form part of the current planning application.

Perimeter Fence and Security Features

2.2.17. In order to protect the solar PV array from vandalism and for health and safety reasons (to prevent intrusion into areas containing electrical equipment), the solar PV array will be surrounded by a perimeter security fence with microwave perimeter intrusion detectors and 10 CCTV cameras mounted on 6m columns for security.

Access

2.2.18. Access to the site will be required by construction vehicles and maintenance vehicles during operation. The DNO will also require access to the high voltage cubicles during both the construction and operational phases. The main site access will make use of an existing access track at the south eastern corner of the site, off Accommodation Road which then joins Bridgwater Road (A370) to the east and continues south alongside the railway, after passing over it to the west. Access to the high voltage cubicles will be provided via another existing access track at the south western corner of the site, off Accommodation Road. This latter access will be used only intermittently. There is also an existing access track to the site at the north eastern corner off the A370, which may also be used during the construction period only.

Drainage

2.2.19. Surface water and run-off from the solar panels will be managed on site. Further details are provided in the flood risk assessment submitted with the application.

Waste

2.2.20. No waste will be produced by on site processes during operation.

Appearance

2.2.21. Each solar PV module is made up of 60 156 x 156mm multicrystalline silicon cells. The glass consists of high transparency solar 3.2mm

glass. The frame consists of anodized aluminium alloy. The solar PV module will be dark grey/blue in colour and have anti-reflective coating to minimise glare. Figure 2.2 shows an image of the proposed solar panels in a similar development setting. Further information on the candidate solar modules is included in Appendix 2.1.

Figure 2.2: Example of solar panel array in a similar setting



Landscaping

2.2.22. A landscape and visual impact assessment has been completed and recommendations for landscaping can be found in Chapter 5.

Decommissioning

2.2.23. The proposal would have an operational lifespan of between twenty and thirty five years. Having reached the final operational year, the proposal would enter its decommissioning phase, lasting approximately 2 months, whereby all equipment would be dismantled and removed from the site. It is not anticipated that there will be any permanent effect on the future uses of the land and the site will therefore be restored to agriculture with only minimal re-instatement works.

Development in the Context of Planning and Energy Policy

2.2.24. A full assessment of the compliance of the proposed development with planning and energy policy is provided in the accompanying Planning

Statement. Policies relevant for each section of the Environmental Appraisal are reviewed in the relevant chapters in this document.

3. NEED FOR THE DEVELOPMENT

- 3.1.1. The proposed development is required in order to produce renewable energy as a response to the need to tackle climate change, to provide greater energy security and to reduce consumer exposure to energy price fluctuations.
- 3.1.2. Recent research such as that by the Intergovernmental Panel on Climate Change and the Stern Review has highlighted the consequences of climate change and has resulted in the Government's commitment to reduce the emissions of carbon dioxide (CO₂) and other greenhouse gases. The UK Low Carbon Transition Plan states that *"To avoid the most dangerous impacts of climate change, average global temperatures must rise no more than 2°C, and that means global emissions must start falling before 2020 and then fall to at least 50% below 1990 levels by 2050"*.
- 3.1.3. The Climate Change Bill received Royal Assent on 27th November 2008 and includes legally binding targets to cut greenhouse gas emissions by at least 80% by 2050 and a reduction in CO₂ emissions of at least 26% by 2020 against a 1990 baseline. The Bill also provides for a carbon budgeting system which caps emissions over five year periods. The strategy for meeting these targets is set out in the UK Low Carbon Transition Plan. This highlights the need to change the UK power sector as three quarters of UK electricity currently comes from coal and gas, and the power and heavy industry sector accounts for 35% of UK emissions. The Plan goes on to state that *"by 2050 virtually all electricity will need to come from renewable sources, nuclear or fossil fuels where emissions are captured and safely stored for the long term"*.
- 3.1.4. In April 2009, the EU issued the final form of Directive 2009/28/EC on the promotion of the use of energy from renewable resources which sets out the objective of deriving 20% of all energy in the EU from renewable resources. The 20% target includes not just the production of electricity but also the energy consuming sectors of transport and heat. This

Directive established legally binding targets for each Member state, some more and some less than the 20% aggregate target. The UK's target is to deliver 15% of energy from renewable sources by 2020 and in response the Government has published the UK Renewable Energy Strategy (UKRES) in July 2009 which sets out how the Government plans to achieve its target. The Government has set a trajectory with interim targets to ensure that the required 15% of final energy demand is met and acknowledges that the first interim target in 2011-12 will be the hardest to meet. The UKRES also recognises the UK's significant solar resource and states that exploiting the solar resource can also lead to the reduction of local levels of air pollution, through displacing combustion based generation methods.

- 3.1.5. The demanding and legally binding targets set out in the EU Directive and the UKRES mean that substantial weight must be attributed to renewable energy proposals that will contribute to those targets, especially in the short term, in order to meet the 2011-12 interim target.
- 3.1.6. The proposed development will help to achieve the UK's target for renewable energy and in turn contribute to meeting the target for the reduction of greenhouse gas emissions.

Renewables Obligation (RO)

- 3.1.7. The Renewables Obligation (RO) is the main financial mechanism by which the Government incentivises the deployment of large-scale renewable electricity generation. It aims to ensure the continued deployment of renewables to meet the UK's 2020 target and beyond. The RO was introduced in 2002 and has supported the deployment of renewables generation. In April 2010, the end date of the RO was extended from 2027 to 2037 for new projects to provide long term certainty for investors.
- 3.1.8. The RO places a mandatory requirement on licensed UK electricity suppliers to source a specified and annually increasing proportion of electricity they supply to customers from eligible renewable sources or

pay a penalty. Ofgem administers the scheme and issue Renewables Obligation Certificates (ROCs) to generators in relation to the amount of eligible renewable energy they generate. Generators then sell their ROCs to suppliers or traders, which gives them a premium on top of the wholesale electricity price. This development will be eligible for funding under the RO and this will help to ensure the viability of the scheme.

4. CONSIDERATION OF ALTERNATIVES

4.1.1. The site was chosen for the development of solar energy as it has a sufficient area of flat open ground, a good level of solar irradiance and is free from constraints such as statutory environmental designations and overshadowing. The site also has good proximity for connection to the national grid.

4.1.2. Energi have worked to identify potential solar sites throughout England. All potential sites were screened against a range of common constraints and only those considered to be constraints-free and suitable for the nature of the development proposed have been entered into the planning process.

4.1.3. The proposed location was selected for the following reasons:

- A rural location is required for the proposed development as it requires a large area to accommodate the solar panels and requires an open space to minimise the impact of overshadowing. The development makes efficient use of land as it allows the co-use of the site for energy generation and agriculture, such as grazing;
- The site benefits from sufficient hours of sunlight to make the development viable;
- The site aspect enables the panels to capture sunlight for a significant proportion of the time per annum;
- The site is free from statutory designations;
- The site has reasonable access from the A370 for construction vehicles.

4.1.4. It is therefore considered that South Hill Farm compares favourably to alternative sites.

5. Landscape Assessment

5.1 Introduction

5.1.1. This Chapter has been prepared by Rob Griffiths (ADAS landscape consultant) in order to support a full planning application by Energi Installations PLC for the construction of a solar PV array at South Hill Farm, Accommodation Road, Bleadon, North Somerset.

Development Proposals

5.1.2. The proposal is for the construction of a large scale solar PV array on land at South Hill Farm. The proposed development comprises approximately 32,000 solar modules arranged into tables. Each table consists of 4 x 22 modules of solar panels mounted on fixed frames approximately 1m off the ground. The panels will be mounted at an angle of 25° - 30° giving the panels a maximum height of 3m.

5.1.3. Each of the tables will be mounted in rows across the site in an east-west direction. The rows of tables will be given a 9.5m pitch which will enable access for maintenance and security. For examples of the solar panel designs and specifications please see Appendix 2.1.

5.1.4. The construction phase of the development is anticipated to take between three and four months with minimal disturbance to the existing vegetation or ground conditions.

5.1.5. The solar panels will occupy 20.6ha with a maximum operating life of 35 years, after which, all infrastructure would be removed from the site, returning it to its original state.

Auxiliary Works

5.1.6. A boundary fence is to be erected around the perimeter with access gates, security lighting, CCTV cameras and microwave detection as required. The fence will allow visual permeability and not feature heavily in views from external locations.

- 5.1.7. The site cubicles containing grid connection infrastructure will be located at the southern western most tip of the site as shown in the accompanying layout plan: CEN4035_Layout.
- 5.1.8. The main access to the site will be from Accommodation Road at the south eastern corner of the site. Within the boundary of the solar PV array site there will be short, 6m wide, temporary vehicular access tracks constructed by levelling or widening existing tracks. An additional access track will be located at the south western corner of the site to service the HV cubicles.
- 5.1.9. Native hedgerows around the site will be strengthened with new planting that reflects the existing species on site. This will provide further mitigation to any adverse visual impacts that arise as a result of the scheme.

5.2 Planning Policy Context

- 5.2.1. The site is not located in any designated area but lies adjacent to the Mendip Area of Outstanding Natural Beauty (AONB) boundary and remains subject to the hierarchy of the UK planning system.
- 5.2.2. The National Planning Policy Framework (NPPF) aims to achieve sustainable development. Chapter 11: Conserving and Enhancing the Natural Environment, highlights the importance of protecting valued landscapes.
- 5.2.3. The North Somerset Council Local Development Framework Core Strategy sets out the long-term vision and strategic planning policies for North Somerset up to 2026. Table 5.1 lists the relevant policies from the Core Strategy.

Table 5.1: Local Development Framework (LDF) Core Strategy Relevant Policies

Plan Policy	Details
<p>Policy CS4: Nature Conservation.</p>	<p>The biodiversity of North Somerset will be maintained and enhanced by:</p> <ol style="list-style-type: none"> 1) Seeking to meet local and national Biodiversity Action Plan targets taking account of climate change and the need for habitats and species to adapt to it; 2) Seeking to ensure that new development is designed to maximise benefits to biodiversity, incorporating, safeguarding and enhancing natural habitats and features and adding to them where possible, particularly networks of habitats. A net loss of biodiversity interest should be avoided, and a net gain achieved where possible; 3) Seeking to protect, connect and enhance important habitats, particularly designated sites, ancient woodlands and veteran trees; 4) Promoting the enhancement of existing and provision of new green infrastructure of value to wildlife; 5) Promoting native tree planting and well targeted woodland creation, and encouraging retention of trees, with a view to enhancing biodiversity.
<p>Policy CS5: Landscape and the Historic Environment</p>	<p>Landscape</p> <p>The character, distinctiveness, diversity and quality of North Somerset’s landscape and townscape will be protected and enhanced by the careful, sensitive management and design of development. Close regard will be paid to the character of National Character Areas in North Somerset and particularly that of the 11 landscape types and 31 landscape character areas identified in the North Somerset Landscape Character Assessment.</p>

	<p>The Mendip Hills Area of Outstanding Natural Beauty (AONB) will be protected by ensuring that development proposals conserve and enhance its natural beauty and respect its character, taking into account the economic and social well-being of the area.</p> <p>Historic Environment</p> <p>The council will conserve the historic environment of North Somerset, having regard to the significance of heritage assets such as conservation areas, listed buildings, buildings of local significance, scheduled monuments, other archaeological sites, registered and other historic parks and gardens.</p> <p>Particular attention will be given to aspects of the historic environment which contribute to the distinctive character of North Somerset, such as the Victorian townscapes and seafronts in Weston and Clevedon.</p>
<p>Policy CS9: Green Infrastructure</p>	<p>The existing network of green infrastructure will be safeguarded, improved and enhanced by further provision, linking in to existing provision where appropriate, ensuring it is a multi-functional, accessible network which promotes healthy lifestyles, maintains and improves biodiversity and landscape character and contributes to climate change objectives.</p>

5.2.4. The Core Strategy is supported by policies in the Replacement Local Plan that have not been entirely replaced by the Core Strategy. Although the Replacement Local Plan has been superseded, many of the policies continue to provide development management criteria. The relevant policies that have not been deleted include:

- GDP/3 – Promoting Good Design and Sustainable Construction;
- ECH/3 – Conservation Area;
- ECH/4 – Listed Buildings;

- ECH/5 – Historic Parks and Gardens;
- ECH/8 – Mendip Hills AONB;
- ECH/9 – Forest of Avon;
- RD/1 – Agricultural and Forestry Development and Farm-based Diversification.

5.2.5. The Mendip Hills AONB management plan states that:

“The primary purpose of the AONB designation is to conserve and enhance natural beauty.

In pursuing the primary purpose, account should be taken of the needs of agriculture, forestry, other rural industries and of the economic and social needs of local communities. Particular regard should be paid to promoting sustainable forms of social and economic development that in themselves conserve and enhance the environment.”

5.2.6. Uphill Conservation Area lies approximately 1km to the north-west of the site and contains part of the Uphill Nature Reserve.

Summary of Planning Policy

5.2.7. Although the proposed development site is not covered by any national, regional, or local landscape designations, the boundary lies in close proximity to the Mendip Hills AONB and Uphill Conservation Area. The North Somerset Core Strategy aims to conserve and enhance the locally distinct character of the area and retain the setting of culturally important features, ensuring that development is of an appropriate scale.

5.3 Methodology

5.3.1. The landscape and visual impact assessment has been based on guidelines provided in the following publications:

- Landscape Character Assessment: Guidance for England and Scotland (The Countryside Agency and SNH, 2002);
- Guidelines for Landscape and Visual Impact Assessment (Landscape Institute and Institute of Environmental Assessment, 2nd edition 2002);
- Highways Agency Interim Advice Note 135/10; Landscape and Visual Effects Assessment, (2010).

Assessment Methodologies

- 5.3.2. The methodology followed by this assessment is based on the principles identified in the above guidance. Landscape encompasses the whole of the external environment, whether within villages, towns or in the countryside. It is not only the visual perception of a combination of landform, vegetation cover and buildings, but also embodies the history, land use, human culture, wildlife and seasonal changes of an area. The landscape can be considered as a resource in its own right (providing food, cultural heritage, clean air, etc.) and as visual amenity (views, walks or recreational pursuits). As a result, landscape and visual impacts are assessed separately.
- 5.3.3. Landscape impacts relate to changes to the fabric, character and quality of the landscape resource and how it is experienced. Visual impacts relate closely to landscape impacts, but relate to changes in composition of views, responses to the changes and to the overall effects upon visual amenity.
- 5.3.4. The significance of the potential impact is evaluated for both construction and operational phases of the proposal and takes into consideration duration and reversibility as well as cumulative impacts.

Landscape Assessment

Landscape Baseline

- 5.3.5. Landscape character assessment studies at a variety of strategic levels will aid the understanding of the landscape at a wider level and allows the identification of elements that may be present at a number of different scales (national, regional, local and site specific). This hierarchical assessment will establish baseline conditions and enable the sensitivity of the landscape resource to be assessed and the significance of impacts that may result from any development to be determined.
- 5.3.6. In order to understand how a development will affect the landscape, it is necessary to consider the different aspects of a landscape resource. This assessment takes into account:
- Direct effects of the works upon individual elements that make up the landscape as well as indirect effects of the associated development;
 - The subtle effects that contribute towards the intangible characteristics of these elements or combinations of elements such as tranquillity, wildness and cultural associations;
 - Change in the character of the landscape, the distinct and recognisable pattern of elements that occur consistently to create a sense of place.

Landscape Impact Assessment

- 5.3.7. Assessing the impact on the landscape resource is achieved by assessing the scale and nature of changes in the landscape by the removal or addition of features, as a result of a new development. These can be positive or negative, direct, indirect, cumulative and either permanent or temporary (short, medium or long term). This assessment will take into consideration both the construction and operational phases of the development.

5.3.8. The magnitude of impact considers all these factors as well as ancillary items and associated infrastructure in order to determine the degree of change from baseline conditions. The terms used to describe the magnitude of impacts are detailed in Table 5.2.

Table 5.2: Magnitude and Nature of Impact and Typical Descriptors*

Magnitude of Impact	Typical Criteria Descriptors
Major Adverse	Total loss or large scale damage to existing character or distinctive features and elements, and/or the addition of new but uncharacteristic and conspicuous features and elements.
Moderate Adverse	Partial loss or noticeable damage to existing character or distinctive features and elements, and/or the addition of new but uncharacteristic and noticeable features and elements.
Minor Adverse	Slight loss or damage to existing character or features and elements, and/or the addition of new but uncharacteristic features and elements.
Negligible Adverse	Barely noticeable loss or damage to existing character or features and elements, and/or the addition of new but uncharacteristic features and elements.
No Change	No noticeable loss, damage or alteration to character or features or elements.
Negligible Beneficial	Barely noticeable improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic features and elements, or by the addition of new characteristic elements.
Minor Beneficial	Slight improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic features and elements, or by the addition of new characteristic elements.
Moderate	Partial or noticeable improvement of character by the restoration of existing features and elements, and/or the removal of

Beneficial	uncharacteristic and noticeable features and elements, or by the addition of new characteristic features.
Major Beneficial	Large scale improvement of character by the restoration of features and elements, and/or the removal of uncharacteristic and conspicuous features and elements, or by the addition of new distinctive features.

*devised from the Highways Agency IAN 135/10

5.3.9. Landscape quality (condition) is based on judgements about the physical state of the landscape and its intactness from visual, functional and ecological perspectives. It also reflects the state of repair of individual features, which make up the character in any given area. Table 5.3 describes the criteria for the assessment of landscape condition.

Table 5.3: Determination of Quality (or condition)*

Landscape Quality	Description Criteria
Exceptional / Very good	Areas that exhibit a strong positive character with value features that combine to give the experience of unity, richness and harmony. These are landscapes that may be considered to be of particular importance to conserve and which may be sensitive or very sensitive to change.
Good / Medium	Areas that exhibit positive character, but which may have evidence of degradation/erosion of some features. Change may be unlikely to be detrimental.
Poor / Very Poor	Areas generally negative in character with few, if any, valued features. Scope for positive enhancement.

*devised from the GLVIA

5.3.10. Establishing the quality of the existing landscape is an important factor in the determination of landscape sensitivity. Combining the magnitude of change with landscape sensitivity allows the significance of overall landscape effects to be determined. Landscape sensitivity is determined by an evaluation of key elements or characteristics of the receiving landscape and reflects the quality, value or contribution to landscape character and the degree to which the particular element or

characteristic can be replaced or substituted, the nature of the proposed project and the type of change (see Table 5.4).

Table 5.4: Landscape Sensitivity and Typical Examples*

Sensitivity	Typical Descriptors and Examples
High	<p>Landscapes which by nature of their character would be unable to accommodate change of the type proposed. Typically these would be;</p> <ul style="list-style-type: none"> • Of high quality with distinctive elements and features making a positive contribution to character and sense of place. • Likely to be designated, but the aspects which underpin such value may also be present outside designated areas, especially at the local scale. • Areas of special recognised value through use, perception or historic and cultural associations. • Likely to contain features and elements that are rare and could not be replaced.
Moderate	<p>Landscapes which by nature of their character would be able to partly accommodate change of the type proposed. Typically these would be;</p> <ul style="list-style-type: none"> • Comprised of commonplace elements and features creating generally unremarkable character but with some sense of place. • Locally designated, or their value may be expressed through non-statutory local publications. • Containing some features of value through use, perception or historic and cultural associations. • Likely to contain some features and elements that could not be replaced.
Low	<p>Landscapes which by nature of their character would be able to accommodate change of the type proposed. Typically these would be;</p>

	<ul style="list-style-type: none"> • Comprised of some features and elements that are discordant, derelict or in decline, resulting in indistinct character with little or no sense of place. • Not designated. • Containing few, if any, features of value through use, perception or historic and cultural associations. • Likely to contain few, if any, features and elements that could not be replaced.
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*devised from the Highways Agency IAN 135/10

5.3.11. The consideration of the sensitivity of the landscape resource against the magnitude of the likely impacts allows the significance of the effects to be determined (see Table 5.5). Significance categories can be beneficial or adverse and the descriptions of these impacts are given in Table 5.6.

Table 5.5: Significance of Effect Categories*

		MAGNITUDE OF IMPACT				
		No change	Negligible	Minor	Moderate	Major
LANDSCAPE SENSITIVITY	High	Neutral	Slight	Slight/Moderate	Moderate/Large	Large/Very Large
	Moderate	Neutral	Neutral/Slight	Slight	Moderate	Moderate/Large
	Low	Neutral	Neutral/Slight	Neutral/Slight	Slight	Slight/Moderate

*devised from the Highways Agency IAN 135/10

Table 5.6: Typical Descriptors of Significance of Effect Categories*

Significance Category	Typical Descriptors Of Effect
<p>1 Very Large</p> <p>Beneficial (Positive) Effect</p>	<p>The project would:</p> <ul style="list-style-type: none"> • Greatly enhance the character (including quality and value) of the landscape • Create an iconic high quality feature and/or series of elements. • Enable a sense of place to be created or greatly enhanced.
<p>2 Large</p> <p>Beneficial (Positive) Effect</p>	<p>The project would:</p> <ul style="list-style-type: none"> • Enhance the character (including quality and value) of the landscape. • Enable the restoration of characteristic features and elements lost as a result of changes from inappropriate management or development. • Enable a sense of place to be enhanced.
<p>3 Moderate</p> <p>Beneficial (Positive) Effect</p>	<p>The project would:</p> <ul style="list-style-type: none"> • Improve the character (including quality and value) of the landscape. • Enable the restoration of characteristic features and elements partially lost or diminished as a result of changes from inappropriate management or development. • Enable a sense of place to be restored.
<p>4 Slight</p> <p>Beneficial</p>	<p>The project would:</p> <ul style="list-style-type: none"> • Complement the character (including quality and value) of

(Positive) Effect	<p>the landscape.</p> <ul style="list-style-type: none"> • Maintain or enhance characteristic features and elements. • Enable some sense of place to be restored.
5 Neutral Effect	<p>The project would:</p> <ul style="list-style-type: none"> • Maintain the character (including quality and value) of the landscape. • Blend in with characteristic features and elements. • Enable a sense of place to be retained.
6 Slight Adverse (Negative) Effect	<p>The project would:</p> <ul style="list-style-type: none"> • Not quite fit the character (including quality and value) of the landscape. • Be at variance with characteristic features and elements. • Detract from a sense of place.
7 Moderate Adverse (Negative) Effect	<p>The project would:</p> <ul style="list-style-type: none"> • Conflict with the character (including quality and value) of the landscape. • Have an adverse impact on characteristic features or elements. • Diminish a sense of place
8 Large Adverse (Negative) Effect	<p>The project would:</p> <ul style="list-style-type: none"> • Be at considerable variance with the character (including quality and value) of the landscape. • Degrade or diminish the integrity of a range of characteristic features and elements.

	<ul style="list-style-type: none"> • Damage a sense of place.
9 Very Large Adverse (Negative) Effect	<p>The project would:</p> <ul style="list-style-type: none"> • Be at complete variance with the character (including quality and value) of the landscape. • Cause the integrity of characteristic features and elements to be lost. • Cause a sense of place to be lost.

*devised from the Highways Agency IAN 135/10

Visual Assessment

Visual Effects

5.3.12. Visual effects are concerned with two aspects; firstly the changes that a new development may bring to the available views of a particular landscape and secondly the changes in the visual amenity from key visual receptors (i.e. the value of a particular view in terms of what is seen and whom the change affects e.g. local residents or visitors).

Determination of the Extent of Visibility

5.3.13. The visibility of a proposed development is influenced by landform, vegetation and existing infrastructure. It is important to determine the extent to which the project would influence the existing views and identify the likely receptors.

Visual Impact Assessment

5.3.14. Assessing the overall impact on visual amenity is achieved by relating the sensitivity of the visual receptors or features to the potential magnitude of change to a particular view.

5.3.15. General assumptions have been made in accordance with current guidance in relation to the sensitivity of visual receptors.

5.3.16. Although residents may be particularly sensitive to changes in their visual amenity, most land use planning regimes consider that public views are of greater value than views from private properties. However, the cumulative effects on a number of residents may be considered to give rise to an effect on the community.

5.3.17. People travelling through or past the affected landscapes in cars, on trains or other transport routes may also be important, depending on extent or scale of view and duration. The sensitivity of example receptors is detailed in Table 5.7.

Table 5.7: Visual Sensitivity and Typical Descriptors*

Sensitivity	Typical Criteria
High	<p>Residential properties.</p> <p>Users of Public Rights of Way or other recreational trails (e.g. National Trails, footpaths, bridleways etc.).</p> <p>Users of recreational facilities where the purpose of that recreation is enjoyment of the countryside.</p>
Moderate	<p>Outdoor workers.</p> <p>Users of scenic roads, railways or waterways or users of designated tourist routes.</p> <p>Schools and other institutional buildings, and their outdoor areas.</p>
Low	<p>Indoor workers</p> <p>Users of main roads (e.g. trunk roads) or passengers in public transport on main arterial routes.</p> <p>Users of recreational facilities where the purpose of that recreation is not related to the view (e.g. sports facilities).</p>

*devised from the Highways Agency IAN 135/10

Magnitude of Visual Effect

5.3.18. The magnitude of a visual effect is about understanding the scale, nature, extent and duration of visual change that a new development will have on a view as well as the screening present. Establishing the magnitude of change in the visual envelope will also take into account any proposed mitigation measures. Table 5.8 describes the terms used to express the magnitude of change.

Table 5.8: Criteria to evaluate magnitude of Visual Effect*

Magnitude of Impact	Typical Criteria Descriptors
Major	The project, or a part of it, would become the dominant feature or focal point of the view.
Moderate	The project, or a part of it, would form a noticeable feature or element of the view which is readily apparent to the receptor.
Minor	The project, or a part of it, would be perceptible but not alter the overall balance of features and elements that comprise the existing view.
Negligible	Only a very small part of the project would be discernable, or it is at such a distance that it would form a barely noticeable feature or element of the view.
No Change	No part of the project, or work or activity associated with it, is discernible.

*devised from the Highways Agency IAN 135/10

Significance of Visual Effect

5.3.19. Significance of visual effect can be assessed by comparing the sensitivity of the receptor against the degree of change in the view (see Table 5.9). Significance categories can be beneficial or adverse and the descriptions of these impacts are given in Table 5.10.

Table 5.9: Significance of Effect Categories*

		MAGNITUDE OF IMPACT				
		No change	Negligible	Minor	Moderate	Major
VISUAL SENSITIVITY	High	Neutral	Slight	Slight/ Moderate	Moderate/ Large	Large/ Very Large
	Moderate	Neutral	Neutral/ Slight	Slight	Moderate	Moderate/ Large
	Low	Neutral	Neutral/ Slight	Neutral/ Slight	Slight	Slight/ Moderate

*devised from the Highways Agency IAN 135/10

Table 5.10: Typical Descriptors of the Significance of Effect Categories*

Significance	Typical Descriptors of Effect
Very Large Beneficial	The project would create an iconic new feature that would greatly enhance the view.
Large Beneficial	The project would lead to a major improvement in a view from a highly sensitive receptor.
Moderate Beneficial	The proposals would cause obvious improvement to a view from a moderately sensitive receptor, or perceptible improvement to a view from a more sensitive receptor.
Slight Beneficial	The project would cause limited improvement to a view from a receptor of medium sensitivity, or would cause greater improvement to a view from a receptor of low sensitivity.
Neutral	No perceptible change in the view.
Slight Adverse	The project would cause limited deterioration to a view from a receptor of medium sensitivity, or cause greater deterioration to a view from a receptor of low sensitivity.
Moderate Adverse	The project would cause obvious deterioration to a view from a moderately sensitive receptor, or perceptible damage to a view from a more sensitive receptor.
Large Adverse	The project would cause major deterioration to a view from a highly sensitive receptor, and would constitute a major discordant element in the view.
Very Large Adverse	The project would cause the loss of views from a highly sensitive receptor, and would constitute a dominant discordant feature in the view.

*devised from the Highways Agency IAN 135/10

5.4 Landscape Assessment

The Existing Landscape

National Landscape Character

5.4.1. The proposed development site is located within the National Character Area 142 – Somerset Levels and Moors, as identified by Natural England. Figure 5.1 in Appendix 5.1 shows the proposed site in relation to the National Character Areas. The key characteristics of Somerset Levels and Moors include:

- Flat, open landscape of wet pasture, arable and wetland divided up by wet ditches or 'rhynes';
- Surrounded, and divided up, by low hills, ridges and islands which form distinctive skylines;
- Peat working and nature reserves contrasting with the rectilinear planned landscape of the Moors;
- Dramatic and prominent hills such as Brent Knoll, the Isle of Avalon and Barrow Mump, rising above the Levels and Moors;
- Sparse tree cover on Levels and Moors contrasting with woodland, hedges and orchards of surrounding hills;
- Sparsely populated Moors but settlements common on hills, ridges and islands;
- International nature-conservation significance for wetland, waders and waterfowl;
- Narrow dune belt fringing Bridgwater Bay;
- Raised rivers and levées, with main roads and causeways flanked by houses. Flooding in winter over large areas.

District Landscape Character

5.4.2. South Hill Farm lies within the Landscape Character Area A – Moors, and sub area A5 – Bleadon Moors, as identified by the North Somerset Landscape Character Assessment. Figure 5.2 in Appendix 5.1 shows

the site in relation to the District Character Areas. The key characteristics of Bleadon Moors reflect those identified in the NCA 142 and include:

- Flat lowland based on beach and tidal flat deposits;
- Mixed pastoral and arable land use;
- Regular fields pattern, medium in size in the heart of Bleadon Moor, with larger geometric fields to the east and around the margins of the Moor;
- Hedgerows intermittent with sparse hedgerow trees in the west of the area, to the east more complete with variety of hedgerow species including willows, oak, elm and ash;
- Network of drainage channels, ditches and rhyes in evidence but not visually dominant due to growth of scrub along smaller channels forming gappy hedgerows;
- River Axe forms southern boundary, partially embanked for flood defence;
- Signs of urban influence to the west with marginal land uses such as model car racetrack and dumped cars, sewage treatment works, and with pylons highly visible in the flat terrain.

Local Landscape Character

- 5.4.3. The local landscape is generally flat with hedge lined fields drained by ditches that channel water to the tidal River Axe. The flat landscape is rural in nature with large holiday parks colonising the edges of Weston-Super-Mare's urban fringe. The quality of the rural landscape is degraded by a high level of declining landscape features such as holiday parks, caravan parks and disused farm buildings. The Mendips Model Racing Club and track add further disturbance to the area that is enhanced by the railway line and the frequent passage of trains through the levels.

- 5.4.4. A line of pylons and overhead power lines add further discordance to the rural landscape with the sewage works on the Bleadon Levels forming a prominent feature that further degrades landscape character.
- 5.4.5. There is a strong sense of place provided by the steep sided upland areas that tower above the flat farmland on the levels with the high number of drainage ditches. Distinction between the landscape types is provided by the contrast of pasture fields on the upland with small patches of woodland, and arable production on the lowlands where woodland is absent.

Landscape within the Scheme Area

- 5.4.6. The majority of the site is currently in arable production with large mature unmanaged hedgerows forming strong field boundaries. The A370 borders part of the site with the railway line and Accommodation Road also forming partial boundaries to create an almost isolated landscape parcel within these linear elements. The site is dissected by numerous drainage ditches that are well vegetated with riparian habitat that is characteristic of the local and wider landscape.

Magnitude of Change

- 5.4.7. The proposed development of a solar PV array at South Hill Farm will give rise to impacts upon the landscape character of the local area during both the construction and operational phases of the development.

Construction Phase

- 5.4.8. The short term nature of the construction phase will minimise any landscape impacts experienced as a result of the proposed development. Temporary landscape effects at the construction stage can give rise to more significant development impacts when considered alongside the residual impacts. Construction operations involve:

- Excavations for underground cables;
- HGV deliveries and movement of vehicles on the site;

- Excavation and construction of foundations for inverter and grid connection infrastructure cubicle buildings;
- Erection of boundary fence and associated security features;
- Installation of inverters and grid connection infrastructure cubicle buildings;
- Construction of hardstanding and access track.

Operational Phase

5.4.9. The long term change to the landscape baseline of the site that will result from the proposed scheme will impact upon different landscape receptors at varying levels.

5.4.10. The installation of the solar PV array will cause a minor adverse impact upon the management of the landscape due to the shift away from arable production, although the boundaries will still be maintained in situ and where possible, enhanced. This will have a negligible beneficial impact on the pattern and form of the landscape in the long term.

5.4.11. The main effects upon landscape character will result from the operational period of the solar PV array due to the size and scale of the development. Table 5.11 details the likely impacts that the proposed development will have upon various landscape features.

5.4.12. Landscape designations are shown in relation to the proposed development in Figure 5.3 in Appendix 5.1.

Table 5.11: Landscape Impacts

Receptor	Description of impact
Linear Features	The A370 forms a strong linear element in the area due to it travelling between the flat ground of the levels and the steep sided Mendip Hills AONB. The majority of vehicular movement in the area occurs along the A370 with a large number of tourists and holidaymakers using the route. Due to the low level of the development and the dense hedgerows that separate the site and

	<p>the A370, the solar PV array is likely to cause a negligible adverse impact to the character and setting of roads in the area.</p>
	<p>The Bristol to Exeter railway line is a strong and recognisable linear element in the levels with numerous small road bridges over the line. The railway line forms part of the site boundary between Weston (where it passes through industrial areas) and the countryside. The proposed development will cause a minor adverse impact upon the character of the railway.</p>
	<p>Although the proposed development site has no public access over it, there are a number of footpaths in close proximity, including the West Mendip Way. The local area is popular for walking due to the high level of tourists that visit the coast. Particularly popular footpaths include those that travel up vantage points such as Brean Down and Uphill. Due to the high level of holiday parks in the area, the proposed development is likely to cause a minor adverse impact upon the character and setting of the footpaths in the area.</p>
	<p>Watercourses have a strong presence in the levels due to the need for land drainage. The River Axe informs much of the landscape pattern due to the rhynes and drainage ditches channelling into it. The proposed development will not have any impacts upon the landscape pattern of the watercourses in the area.</p>
<p>Cultural Features</p>	<p>St Nicolas & St Barnabas Grade II* Listed Church is sited on top of a cliff to the northwest of the proposed development site and dates from around 1080. The church is also a local landmark due to its prominent location and partially ruined nature. The proposed development will have a minor adverse impact on the character and setting of the church due to the proximity.</p>
	<p>The Grade I Listed 14th century Church of St Peter and St Paul dominates the village of Bleadon. Set against the Mendip Hills AONB, the church is a local landmark that towers above the surrounding development. Bleadon village is well separated from the proposed development site by the A370 and the smaller Bleadon Road as well as the fields that lie between them. The</p>

	<p>proposed development will have a negligible adverse impact upon the character and setting of the church.</p>
	<p>Uphill Conservation Area includes the church and part of the hill that it is situated on. There is a high level of landscape separation between the conservation area and the proposed site, mainly provided by the railway line and pylons that pass between the two. The proposed development will cause a minor adverse impact upon the Uphill Conservation Area.</p>
<p>Settlements</p>	<p>Bleadon is a small village situated to the east of the proposed site at the bottom of the Mendip Hills. The village is relatively self contained and is linear in nature. The location of the village at the foot of the steep hills positions it in the transition between the levels and the hills. The proposed development will cause a minor adverse impact upon the character and setting of Bleadon due to the size of the development and the proximity to the village.</p>
	<p>Uphill is a village that is situated immediately adjacent to Weston-Super-Mare and is separated from the proposed site by a hill, railway and a country lane. Part of Uphill is designated as a Conservation Area although much of it is made up from caravan parks, new housing development and Weston General Hospital. The proposed development will cause a negligible adverse impact upon the character and setting of Uphill.</p>
	<p>The settlement of Brean is linear and follows the coastline, mainly made up from caravan parks that line Warren Road. The permanent residential properties that line the beach have narrow parcels of land and have been engulfed by caravan and holiday parks. The proposed development will cause a negligible adverse impact upon the character and setting of Brean due to the significant deterioration of character by existing development.</p>
	<p>The settlement of Lympsham is situated on the levels to the south of the proposed development. Lympsham is a small settlement that is typical of the levels with a mix of old and new buildings. The village has a high level of vegetation which includes a high number</p>

	<p>of large mature trees that are generally absent from the landscape of the levels. The proposed development will cause a negligible adverse impact on the landscape setting of Lympsham due to its distance from the site.</p>
	<p>Oldmixon is a suburban development of Weston-Super-Mare that is situated on the side of Bleadon Hill to the north of the proposed site. The settlement is generally characterless although along some roads, the surrounding hills and countryside in the distance form a backdrop to the buildings. The proposed development will not cause a negligible adverse impact to the setting of Oldmixon due to its proximity.</p>
	<p>Purn is a small collection of residential properties along the A370, immediately adjacent to the proposed development site. Purn is not a settlement as such but is included due to the proximity of the proposed development to the residential properties. The development will cause a minor adverse impact upon the character of Purn. The presence of Purn Holiday Park and the A370 mean that there is a high level of existing landscape disturbance in the vicinity of Purn.</p>
<p>Point Features</p>	<p>Brean Down is a local landmark that is distinct and recognisable from miles in each direction. It is also a popular destination for tourists and walkers. The development of a solar PV array will not cause any change to the character or setting of Brean Down as a landscape feature.</p>
	<p>Uphill Windmill is a local landmark that is often viewed in conjunction with St Nicolas & St Barnabas Church. The windmill is a recognisable element of the local landscape that enhances enjoyment of the immediate landscape as well as the wider area from which it is viewable. The proposed development will cause a minor adverse impact upon the character and setting of the Uphill Windmill.</p>
	<p>The widely recognisable Brent Knoll is a landmark that can be identified from distance and is a familiar feature of the local</p>

	<p>landscape. The proposed development will have negligible adverse impacts upon the character and setting of Brent Knoll due to the scale of the development.</p>
	<p>The large sewage plant on Wayacre Drove has a strong presence in the area due to the size of the structures against the extremely flat landscape around them. The plant is constructed on flood defences of the River Axe and is discordant with the character of the area. The proposed development will not cause any changes to the setting of the sewage plant.</p>
	<p>Brean Leisure Park has a number of fairground rides and attractions that form prominent landscape features, albeit temporary ones. The tall structures of the fairground rides are recognisable elements of the local coastal landscape. Due to the nature of the fairground infrastructure, the proposed development will not cause any adverse impact upon the character or setting of these point features.</p>
<p>Land Use</p>	<p>The proposed site is currently used for agriculture and is classified as Grade 3 – good to moderate quality agricultural land. Although the land will be taken out of arable production, grazing would be possible during the operational phase of the development if land were to be seeded with agricultural or biodiversity flora mixture. The proposed development will cause a minor adverse impact upon the agricultural land use of the area.</p>
	<p>Due to the proximity to the coast and the popularity of the area as a holiday destination, much of the landscape is dedicated to formal recreational use. There are numerous leisure uses such as mini golf, fairground rides, farm attractions and model car racing as well as informal recreational uses such as walking, cycling and horse riding. The proposed development will not cause any adverse impacts upon formal recreation in the local vicinity but will cause a minor adverse impact upon informal recreational activities.</p>
	<p>There are a significant number of caravan and holiday parks in the locale with Purn Holiday Park being immediately adjacent to the</p>

	proposed site. The holiday parks are generally isolated units with a sterile character. The proposed development will cause a negligible adverse impact upon the character of holiday and caravan parks in the area.
Land Form	The landform of the local area varies from the extremely flat levels to the steep hills of the Mendips, Brean Down and Brent Knoll. The fields of the levels are divided by dense hedgerows and rhynes. The proposed development will not cause any changes to the land form of the area due to the nature of the project.

5.4.13. The operational phase of the development will cause a minor adverse impact upon the landscape character of the area.

Decommissioning Phase

5.4.14. The effects on Landscape Character during the de-commissioning period will be similar to those during the construction period. There will be a temporary increase in plant and vehicle movements while the solar panels and associated infrastructure are removed from site.

5.4.15. This activity will cause a negligible adverse change to the tranquillity of the local area. Upon completion of de-commissioning, the landscape will be reinstated to its present status and condition.

Landscape Quality

5.4.16. The quality of the receiving landscape for the proposed development has been assessed as medium due to the positive character of the Mendip Hills AONB, the levels and the coastal landscape. Although there is a positive character exhibited by the different landscape types in close proximity to the proposed site, there is a high level of degradation upon that character caused by the high volume of holiday and caravan parks across the area.

5.4.17. The proposed site lies on land that is categorised as Grade 3 – good to moderate quality agricultural land (as shown in Figure 5.3).

Landscape sensitivity

5.4.18. The local landscape is considered to have a moderate sensitivity to development due to the sense of place that is provided by the Mendip Hills and Somerset Levels alongside the discordant elements of holiday parks. There are no elements that cannot be replaced within the boundary of the development site that will be lost as a result of the development. The limited operational phase of the development means that any impacts upon landscape character will be restored during the decommissioning phase.

Significance of landscape effects

5.4.19. With the baseline conditions suggesting that the proposed development would cause a minor adverse impact upon the landscape character of the area and the sensitivity of the landscape determined to be moderate, the significance of the effects that the development is likely to cause to the landscape character of the area is considered to be **slight adverse**.

Cumulative landscape effects

5.4.20. The construction of three lakes for storage of water for irrigation of arable crops (Planning application 11/P0305/F) has begun in land adjacent to the proposed site, at House Farm. The large scale construction works will potentially compound any impacts that arise as a result of the construction phase of the proposed solar PV array.

5.4.21. There will be no cumulative impacts during the operational phase due to the stark contrast in project type.

Summary of Landscape effects

5.4.22. The proposed solar PV array will cause temporary impacts upon the landscape character during the construction phase. The construction traffic and machinery will cause a negligible adverse increase to impacts upon the tranquillity of the rural landscape that are already provided by the busy A370.

- 5.4.23. Installation of the solar PV array at South Hill Farm will cause a minor/moderate adverse impact upon the management of the landscape due to the change of use. However, the land could still be used for grazing or hay/silage production once in operation so its agricultural use would not be entirely lost.
- 5.4.24. There will be negligible beneficial impacts upon landscape pattern due to the retention and enhancement of all boundary features on site such as hedges and ditches that are so typical of the levels landscape.
- 5.4.25. The significance of landscape effects that are likely to arise as a result of the proposed development is **slight adverse**.

5.5 Visual Assessment

Visual Baseline

- 5.5.1. The proposed development site sits within the levels landscape surrounded by steep sided hills that provide extremely long ranging vantage points with wide vistas over the flat levels and Bridgwater Bay to the Quantocks.
- 5.5.2. Although there is a lack of woodland on the levels, views tend to be short in distance due to the extremely flat terrain and the presence of foreground screening elements such as buildings, hedgerows and willow trees lining the drainage ditches. Even where bridges over roads of railways provide elevated vantage points, views are temporary and often still heavily restricted by hedgerow vegetation.
- 5.5.3. The local landscape is rural in nature but has a high level of visual disturbance that is provided by holiday parks, pylons and industrial scale buildings such as those at the sewage plant.
- 5.5.4. The local area has a high level of water and wet mud present in views from elevated locations. These wet areas coupled with the Bristol Channel and the shiny surfaces of the numerous caravans, creates a high level of reflected light for views west from the Mendips.

Extent of Visibility

- 5.5.5. The majority of the proposed development site has a well vegetated boundary that prevents views into and over the site from ground level. There are parts of the boundary where vegetative screening is not quite as strong and allows partial views of small areas of the site (along Accommodation Road and from the railway line).
- 5.5.6. However, some nearby elevated locations have long distance vistas of the area that include clear views of large parts of the site. The elevated locations that the proposed development will be visible from include the Mendip Hills AONB and Uphill Windmill, in the fringe area of Uphill Conservation Area.
- 5.5.7. The proposed solar PV array is only anticipated to be visible from a small number of residential properties that are situated in elevated locations.
- 5.5.8. The construction phase and associated work such as excavations for cabling are likely to be the most visually intrusive aspect of the construction phase. The temporary nature of this work is unlikely to cause any significant adverse visual impacts upon the local area.
- 5.5.9. The solar panels are designed to absorb the sun and use anti-reflective coatings which significantly reduce reflectivity and increase the efficiency of the cell. They are essentially light converters and have extremely low reflection levels. Furthermore reflected sunlight is less intense than direct sunlight. The 'dazzling' caused by reflected light is very limited in position and time due to the suns changing position throughout the day.

Visual Receptors

- 5.5.10. The likely visual impacts that the proposed development is predicted to cause to various visual receptors are detailed in Table 5.12.

Table 5.12: Potential Visual Impacts

Receptor	Description of Impact	Sensitivity	Magnitude of Change	Significance of Effects
Up to 1km				
Residential Properties in Oldmixon	There are relatively few residential properties that exist within 1km of the proposed development site that will be afforded views of the development. A small number of properties in the south-western corner of Purn Road will have views over the development from their elevated location although most of the other properties in Oldmixon will be well screened from views of the development by landform, other buildings and existing foreground vegetation.	High	Moderate Adverse	Moderate
Residential Properties in Purn	There are not anticipated to be any views of the development from the residential properties in Bleadon that lie within 1km of the site. The Grange at Uphill will not have views of the development and residential properties at Purn (along the A370) will be afforded a high level of visual screening from	High	No Change	Neutral

	<p>existing foreground vegetation that forms the site boundary.</p> <p>Undercliff House is on the western side of Purn Hill and overlooks the proposed development site with views being particularly apparent from the upper windows.</p>	High	Moderate Adverse	Moderate Adverse
Roads	<p>Local roads support a high level of tourist traffic during holiday seasons. Views of the proposed site for motorists that travel along the A370 are extremely restricted due to the high level of boundary vegetation and a number of buildings in the foreground. Where views may occur, they will be extremely short duration snapshots through gaps in hedges. The lower level of vegetation that lines Accommodation Road allows snapshot views over small parts of the proposed development site. Mitigation planting would reduce the field of view further. The roads are frequently used by cyclists and horse riders that will have an increased duration</p>	Moderate	Negligible	Slight Adverse

	of visual intrusion although still temporary.			
Public Access	There are a number of popular footpaths in the vicinity of the proposed development. Existing vegetative screening prevents long distance views from the footpaths and public access land except sections of Purn Hill where views of the levels are available including parts of the proposed development site.	High	Moderate Adverse	Moderate Adverse
Railway line	The Bristol to Exeter railway line passes along the western boundary of the proposed site and is on a slightly raised bank. Trains passing through the area will be afforded temporary views over parts of the proposed development.	Moderate	Minor Adverse	Slight Adverse
Purn Holiday Park	The large number of caravans that are located at Purn Holiday Park generally do not have windows that face directly towards the proposed development site. The temporary residencies are arranged in a regimental	Moderate	Negligible	Neutral

	<p>pattern with gaps in hedges providing a few individual pitches with views off the park. There is a high level of existing foreground screening that will prevent views of the proposed development from the holiday park.</p>			
Toll Road	<p>There are five residential bungalows along Toll Road, where the railway line intersects the A370. The residential properties are generally well screened by existing vegetation in the gardens and along the railway line. There are partial views of small parts of the proposed site.</p>	High	Minor Adverse	Slight Adverse
West Mendip Model Racing Track	<p>Users of the West Mendip model racing circuit are afforded a significant level of visual screening by boundary hedges that surround the track. Users of the track are not unduly concerned about the quality of the visual surroundings due to the nature of the land use.</p>	Low	Negligible	Neutral
1km – 2.5km				

Roads	There are not anticipated to be any changes to the views or visual amenity of roads in this area as a result of the proposed development. There is a high level of foreground screening from existing vegetation and buildings.	Moderate	No Change	Neutral
Residential Properties on Bleadon Hill	The residential settlement of Bleadon has a number of residential properties that face towards the proposed development site. Purn Hill, vegetation along Bridgwater Road and Purn Holiday Park provide a high level of visual screening that will prevent any views of the proposed development from the village.	High	Minor Adverse	Slight Adverse
Public Footpaths	The public footpaths that exist between 1km and 2.5km from the proposed site include those that pass over the raised ground at Uphill and Bleadon Hill. Views of the site are in some cases open vistas where the development will make up a noticeable proportion of the view.	High	Minor Adverse	Slight Adverse

Uphill Conservation Area	The majority of views from the Uphill Conservation area are restricted to north of Uphill Farm due to the hill forming a prominent visual barrier. From the hill, views are available of the proposed development site although boundary hedgerows provide some visual screening. Views from The Grange are channelled to the west of the proposed site and although there will be no direct views from the house, the proposed development may feature in views from the grounds.	High	Minor Adverse	Slight Adverse
Settlement of Bleadon	There are not anticipated to be any views of the proposed site from the settlement of Bleadon due to the high level of existing visual screening that is provided by landform and vegetation. The low profile of the development means that it will not be visually prominent when viewed from Bleadon.	High	No Change	Neutral
Farms across the	There are a number of Farms scattered across the levels, some of which	High	No Change	Neutral

Levels	are caravan parks as well as farms. There is a high level of foreground visual screening provided by hedgerows and hedgerow trees. The proposed development is not anticipated to feature in views from any of the residential properties or caravan sites across the levels.			
Helenge Hill	This part of the Mendip Hills AONB has wide ranging views over the levels to the south. The raised location allows a wide vista with long distance views. A large proportion of the site is screened from view by Purn Hill. The numerous holiday parks in the area create visual disturbance in the rural landscape.	High	Minor	Slight Adverse
2.5km – 5km				
Brean Down	Brean Down is a local vantage point that is popular with tourists and offers long ranging vistas over the wider countryside. The proposed development site is partially obscured by the raised land at	High	Minor Adverse	Slight Adverse

	Walborough.			
Residential properties at Lymsham	The residential settlement at Lymsham is relatively enclosed by foreground vegetation and development. Roadside vegetation limits the extent of views over the wider countryside.	High	No Change	Neutral
Warren Road, Brean	Warren Road is a sunken road along the coast that is lined almost the entire length by residential properties and holiday parks. Views are channelled along the road and there are no views over the wider countryside.	Moderate	No Change	Neutral
Weston-Super-Mare	The town of Weston-Super-Mare is screened from the proposed development site by the raised topography at Uphill and Oldmixon. The proposed development will not be visible from any parts of Weston.	High	No Change	Neutral
Mendip Hills AONB	The Mendip Hills AONB stretches west over the M5 motorway where the high level of vegetation and varying topography mean that views of the proposed development site are	High	Minor Adverse	Slight Adverse

	<p>limited to a few small locations. To the east, the local vantage point at Crook Peak offers very long views over the flat countryside. Views of the site are restricted by Loxton Hill and Purn Hill.</p>			
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5.5.11. Following desk based study and field surveys, potentially significant viewpoints that would be affected by the proposed development were selected. Figure 5.5 in Appendix 5.1 shows the locations of these viewpoints.

5.5.12. The selected representative viewpoints were then used to produce photomontages that show how the views would look during the operational phase of the development. The viewpoints and their corresponding photomontages are displayed in Appendix 5.2.

Viewpoint 1 – Brean Down

5.5.13. The open vista that is available from the local vantage point of Brean Down gives wide ranging and long distance views over the wider countryside. Brean Down is a popular tourist destination and a large number of visitors both local and tourists visit the hill throughout the year. The elevated location is locally important and stands out from the surrounding area giving it a high sensitivity to change. There is a large amount of visual clutter and intrusion in the existing view.

5.5.14. A large number of caravan and holiday parks form features in the visual envelope as well as the line of pylons and the large waste treatment plant. These visual detractors reduce the quality of views experienced from Brean Down.

5.5.15. Part of the proposed development site is not visible in views from Brean Down due to the raised profile of Walborough Nature Reserve located

south of Uphill, north west of the site. The visual screening of the topography and the tall hedges around the proposed development site mean that potential views of the development are heavily restricted. The proposed solar PV array will be partially visible to receptors as they scour views from the summit of Brean Down.

- 5.5.16. The temporary and partial nature of the views and the high level of visual clutter visible mean that the proposed development is likely to cause a minor adverse impact upon the visual amenity of Brean Down. The significance of the effects that the proposed development will bring to the visual amenity of Brean Down is anticipated to be **slight adverse**.

Viewpoint 2 – Uphill Windmill

- 5.5.17. Uphill Windmill sits just outside the conservation area that contains the church and is a local tourist destination that offers long distance views over the levels to the south. The footpaths in the area are well used by both local people and tourists and so give it a high visual sensitivity. Much of the levels landscape is occupied by pasture fields bordered by hedgerows and ditches which give the view a geometric pattern.
- 5.5.18. A significant amount of visual clutter is provided by the presence of the line of pylons, numerous holiday parks and some industrial scale farm buildings. There will be partial views of the proposed development that form a perceptible element in the temporary views of receptors in this area.
- 5.5.19. The proposed solar PV array at South Hill Farm is likely to be partially screened from view by the tall hedges that form the existing field boundaries. The development will not break the skyline and so the solar PV array is likely to blend into the surrounding view with Purn Hill, with vegetation surrounding Purn Holiday Park forming a backdrop.
- 5.5.20. The photomontage (Appendix 5.2) shows that the scale of the view will help to absorb the solar PV array, with hedgerows and trees providing a buffer between the dominating elements of Purn Hill and Brent Knoll.

The most obvious change that is likely to occur as a result of the development will be the change in landscape colour and texture.

- 5.5.21. Views are drawn along the horizontal view to the Bleadon Hill and Brent Knoll. The proposed development is likely to cause a minor adverse impact to the visual amenity of the area.
- 5.5.22. Due to the high sensitivity of the area to changes in the views and the minor adverse impact the development is likely to bring about, the significance of the effects that are likely to arise as a result of the proposed development is considered to be **slight adverse**.

Viewpoint 3 – Hellenge Hill

- 5.5.23. The Hellenge Hill Nature Reserve on Bleadon Hill is afforded clear views over the levels to the south and west with caravan and holiday parks forming a significant detractor in the views from Hellenge Hill. Further visual intrusion into the rural view is experienced as a result of the presence of the waste treatment plant and line of pylons.
- 5.5.24. Although the nature reserve is not a tourist destination, it has a high frequency of use by local people and users of the West Mendip Way. The high frequency of use means that the area has a high sensitivity to changes in the visual amenity. The residential houses to the north of the reserve (along Bleadon Hill) have no views over the proposed site.
- 5.5.25. The vista is extremely horizontal due to the coastline providing the extent of the view. A significant proportion of the proposed development site is screened from view by Purn Hill and the horizontal nature of the visual envelope draws views along the length of the coastline. The proposed solar PV array is anticipated to cause a negligible adverse impact upon the visual amenity of the area.
- 5.5.26. Due to the nature reserve being considered as a highly sensitive visual receptor and the development likely to cause a negligible adverse impact upon views, the significance of the effects that are likely to arise is anticipated to be **slight adverse**.

Viewpoint 4 – Purn Hill

- 5.5.27. The nature reserve at Purn Hill is a local vantage point that is well used by local people and offers views over the Bleadon Levels to the west. A large proportion of the proposed development site features within the view west from the footpath over Purn Hill. The vista is extremely horizontal with few elements breaking the skyline. Brean Down draws views along the middle distance where caravan and holiday parks dominate the rural vista.
- 5.5.28. Purn Hill has a high frequency of use by local people and is considered to be high in visual sensitivity. The installation of a solar PV array at South Hill Farm will cause a moderate adverse impact upon views from parts of Purn Hill. A large area of the foreground view will be occupied by the proposed solar PV array which will become a noticeable feature in views from Purn Hill.
- 5.5.29. The photomontage shows that despite the introduction of the solar PV array, views are still drawn out towards the Bristol Channel and the Exmoor Hills beyond. The development will increase the level of clutter and cause changes to the texture and colour of the view west from Purn Hill.
- 5.5.30. The development will not change the field pattern but will increase the level of disturbance and clutter that is perceptible during the short term views that are gained from parts of Purn Hill. The significance of the effects that are anticipated to arise as a result of the proposed solar PV array is determined to be **moderate adverse**.

Viewpoint 5 – Accommodation Road

- 5.5.31. Views from Accommodation Road are generally short distance due to a high level of vegetation along ditches and field boundaries. The flat topography means that where gaps in roadside vegetation do occur, the snapshot views that are available are still only short distance, although filtered views of the elevated land of Bleadon Hill and the residential properties along Purn Road are visible above the vegetation.

- 5.5.32. Pylons add a vertical element to the view as well as contributing to the clutter that the industrial farm buildings bring to views along Accommodation Road. Purn Holiday Park is southeast of this location with parts being afforded screening from mature willows although there are a small number of caravans that overlook Accommodation Road and the farm beyond. However, no views of the proposed development site are available from the holiday park.
- 5.5.33. The photomontage shows how little of the proposed development will be visible from Accommodation Road and how small the snapshot glimpses of the development will be. A very small amount of the development is visible and will not alter the overall balance of elements that make up the view.
- 5.5.34. Accommodation Road has a moderate sensitivity to changes in visual amenity as it is used by tourists as well as local people. The proposed solar PV array at South Hill Farm is anticipated to cause a negligible adverse impact upon the views experienced along the road.
- 5.5.35. The snapshot glimpses will be very short in duration for passers by and the significance of the effects that are likely to arise as a result of the proposed development has been determined to be **slight adverse**.

Viewpoint 6 - Brent Knoll

- 5.5.36. Brent Knoll is a very prominent location in the wider landscape that attracts a high frequency of tourists and visitors. Views from Brent Knoll are long distance and wide ranging vistas over the levels with the Mendip Hills AONB forming the extent of views to the northeast.
- 5.5.37. Due to the high frequency of use and the cultural associations that Brent Knoll is afforded, it is considered to have a high sensitivity to changes in views. There are clear views of the surrounding land in all directions from the summit.
- 5.5.38. The proposed site is barely perceptible in views from Brent Knoll and even less so when it is considered as part of the 360° views that are

offered from the vantage point. The proposed development site will cause a negligible adverse impact upon the visual amenity of receptors at the summit of Brent Knoll due to the distance from the site and the scale of the views available.

- 5.5.39. The significance of the effects that are anticipated to arise as a result of the proposed development have been determined as **slight adverse**.

Viewpoint 7 – Bleadon Level

- 5.5.40. Bleadon Level is very flat, low lying agricultural land and is divided in many locations by tall mature hedgerows that provide a strong visual screening element with few gaps, generally preventing views towards the Mendip Hills AONB.

- 5.5.41. Where small gaps in the vegetation allow views towards the AONB, it is the higher ground that the temporary partial glimpses allow views of from the bridleway. The bridleway is determined to have a high visual sensitivity and is a popular route with both tourists and local people.

- 5.5.42. The proposed development at South Hill Farm is well screened from views of receptors on Bleadon Level by the high level of vegetative screening from existing vegetation along field boundaries. The development will not be visible from the bridleway and so will not cause any changes to the existing views.

- 5.5.43. The photomontage confirms that the solar PV array will not be visible from this area due to its low height and will not feature in views towards the Mendip Hills AONB.

- 5.5.44. The significance of the effects that are likely to arise as a result of the proposed development has been determined to be neutral.

Cumulative Visual Impacts

- 5.5.45. The construction activities of the proposed development could potentially overlap with the construction activities of three lakes for storage of water for irrigation of arable crops (Planning application

11/P0305/F). This could lead to a negligible adverse impact upon views of the landscape that include both construction areas such as those from Viewpoint 4 – Purn Hill.

5.5.46. At the time of writing, there is one approved application for a solar park in North Somerset located approximately 12km north east of the South Hill Farm site. Due to topography and distance there will be no intervisibility between the two sites.

5.5.47. In summary, there are no approved applications for solar PV arrays close enough to the proposed development to cause cumulative impacts and so there are not likely to be any adverse impacts on views as a result of numerous solar PV arrays. However, there may be cumulative visual impacts during the construction phase of the development as a result of the construction work on land to the west of the railway.

Summary of Visual Impacts

5.5.48. Although the proposed development will bring uncharacteristic elements into the area, there are very few locations that the development will be visible from. The high level of existing vegetation that lines field boundaries forms a strong visual screen that will prevent views of the solar PV array from external locations across the levels.

5.5.49. From elevated locations, including the Mendip Hills AONB, views of the proposed solar PV array are more apparent. The high level of existing clutter and visual disturbance in the rural views coupled with the short duration of many of the receptors means that views from the elevated locations are already heavily disturbed.

5.5.50. There are few residential properties that will be subject to a permanent change in visual amenity as a direct result of the proposed development. Undercliff House is likely to receive the highest level of change from the visual baseline as a result of the proposed development. A number of residential properties in the southwest corner of Purn Road will be adversely impacted upon by the proposed

development. It is also anticipated that there are likely to be partial views from two of the properties along Toll Road.

5.5.51. There are not anticipated to be many views of the proposed development from the Mendip Hills AONB. Where views of the development site are available, they are partial views that are obscured by fore- and middle-ground topography and vegetation.

5.6 Design Optimisation

5.6.1. A number of aspects of the scheme design have been included to reduce any landscape impacts that the proposed development is likely to cause. These include:

- Retention and maintenance of existing hedges around the site. Where hedge species are removed or damaged, ensure that they are replaced like for like;
- Reinstatement of the ground conditions once the excavation and construction works are complete for the module foundations;
- Routing the access tracks to prevent the need for hedge removal and follow existing farm access tracks where possible.

5.6.2. To reduce any effects of development, the following mitigation measures have been proposed:

- Ensuring that the grid connection infrastructure cubicle and fencing are coloured to prevent visual intrusion;
- Planting new hedges and gapping up existing boundary hedges to reduce visibility of the development from off-site locations;
- Allow hedges around boundaries and grid connection infrastructure cubicle to grow to a minimum height of 3m.

5.7 Conclusion

5.7.1. The assessment of potential impacts to both landscape character and visual amenity of the area were carried out as detailed in the methodology and in accordance with the relevant guidelines. Impacts of

the proposed development have been identified and given a significance weighting.

- 5.7.2. There are a high number of degrading landscape features in the existing landscape as well as a significant number of existing visual detractors that provide the rural area with a declining character and quality of visual baseline.
- 5.7.3. The proposed development sits in accordance with all local and national planning policy due to the lack of impact that it will cause to the Mendip Hills AONB and the reversibility of the development at the end of its 35 year life span. The Mendip Hills AONB management plan promotes sustainable forms of economic development that conserve and enhance the environment.
- 5.7.4. The proposed installation of a solar PV array at South Hill Farm is expected to cause a minor adverse impact upon the character of the Bleadon Moors. The landscape is considered to have a moderate sensitivity to change which means that it has the capacity to absorb the development. The significance of the effects upon the landscape character that are likely to arise as a result of the development is considered to be **slight adverse**.
- 5.7.5. The flat topography of the Bleadon Moors means that visibility of the proposed development is likely to be low although, where elevated vantage points do occur, there will be increased impacts upon visual amenity. There will be localised, moderate adverse impacts upon a small number of residential properties such as Undercliff House and the properties in the southwest corner of Purn Road as well as Purn Hill Nature Reserve.
- 5.7.6. Although the proposed development will be visible from local vantage points (including part of Uphill Conservation Area), the existing views feature a high level of clutter and visual detractors. At distances greater than 1km from the proposed development, visual impacts are anticipated to be **slight adverse**.

5.7.7. The impact assessment was undertaken in the summer months when foliage levels are high. However, the impacts upon views are not anticipated to vary during the winter months when leaf fall provides a worst case scenario.

6. Ecology

6.1 Introduction

- 6.1.1. This chapter has been prepared by ADAS UK Ltd in accordance with the Screening Opinion and correspondence issued by North Somerset Council.
- 6.1.2. The chapter provides a description of the existing ecological features at the site, assesses the impact of the proposed development, proposes mitigation measures and assesses the residual impact.
- 6.1.3. This chapter should be read with reference to Appendices 6.1. Appendix 6.1 details the results of the Phase 1 habitat survey.

6.2 Legislation and Policy Context

Wildlife and Countryside Act

- 6.2.1. The Wildlife and Countryside Act 1981 (WCA 1981) (as amended) provides UK-wide protection for certain mammal, reptile and amphibian species, listed under Schedule 5. This makes it an offence to intentionally or recklessly disturb, kill or injure such an animal or to damage or destroy a breeding site or resting place of such an animal.

Conservation of Habitats and Species Regulations

- 6.2.2. The Conservation of Habitats and Species Regulations 2010 supersedes the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). These Regulations transpose into UK law EC Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the "Habitats Directive"). The Habitats Directive established the Europe-wide protection of certain species and habitats. Species afforded protection under the Habitats Directive are termed 'European Protected Species' (EPS).
- 6.2.3. The Conservation of Habitats and Species Regulations make it an offence to deliberately kill, capture, or disturb a European Protected Species or to damage or destroy the breeding site or resting place of such an animal. It also lists habitats of European-wide importance under

Annex 1 of the Directive. Sustainable areas of such habitats are eligible for designation as Special Areas of Conservation.

The Protection of Badgers Act

- 6.2.4. Badgers and their setts are afforded protection under the Protection of Badgers Act 1992. . It is an offence to wilfully kill, injure, ill-treat or trap badgers, intentionally or recklessly damage, destroy or obstruct setts which show signs of current use by badgers, including seasonal use, disturb badgers whilst they are occupying a sett and cause a dog to enter a sett.
- 6.2.5. The legislation also deems that destruction of a badger's foraging territory, such as the blocking of their paths to feeding areas or to water sources, may be classified as cruel ill-treatment.

UK Biodiversity Action Plan

- 6.2.6. The UK Biodiversity Action Plan (UK BAP) published in 1994, and updated in 2007, is the government's mechanism for implementing strategies for conserving species and habitats in accordance with the Convention on Biological Diversity. The UK BAP presents an action plan for a variety of Priority Species and Habitats. Local Biodiversity Action Plans (LBAPs) were set-up to locally implement the national BAP and to identify targets for local action plans.
- 6.2.7. Species and habitats targeted under the BAP process are termed BAP priority species and BAP priority habitats respectively.
- 6.2.8. The relevant LBAP is Action for Nature: North Somerset Biodiversity Action Plan 2005 (2005). The North Somerset BAP focuses on locally implementing the objectives of the UK BAP, but with a specific focus on species and habitats of particular importance in North Somerset, or where North Somerset has a key part to play in achieving national objectives through for example, important local populations of nationally scarce species.
- 6.2.9. Table 6.1 summarises the legislation of relevance to the specific ecological receptors referred to in this chapter.

Table 6.1: Legislation relating to species and habitats recorded in the study area

Species / habitat	Legislation
Plants (various)	UK BAP Priority Species North Somerset LBAP: Priority Species
Water Vole	Wildlife and Countryside Act 1981 (as amended) UK and LBAP priority species
Birds (various)	Wildlife and Countryside Act 1981 (as amended) UK and LBAP Biodiversity Action Plan Priority Species Birds of Conservation Concern Red and Amber Lists

Designated Sites

6.2.10. International, national and European legislation makes provision for sites that are of particular importance for nature conservation to be designated, and thus afforded a degree of protection from damaging activities or development. Depending on the reason for and method of designation, such designations include:

- Special Areas of Conservation (SACs);
- Special Protection Areas (SPAs);
- Sites of Special Scientific Interest (SSSIs);
- National Nature Reserve (NNRs); and,
- Wetlands of International Importance (Ramsar sites).

6.2.11. Local authorities also have the discretion to designate sites at a district or county level. These typically are at the level below the formal designations referred to above, but are nevertheless regarded as being of some local nature conservation interest. They are not however offered the same level of protection as nationally or internationally designated sites and are hence often referred to as 'non-statutory sites'.

6.2.12. In North Somerset, such sites are termed Wildlife Sites.

The National Planning Policy Framework

6.2.13. The National Planning Policy Framework (NPPF) of March 2012 replaced the previous planning policy for biodiversity conservation; Planning Policy Statement 9 (PPS9). Paragraph 117 of the NPPF states that to minimise impacts on biodiversity, planning policies should:

- *Plan for biodiversity at the landscape scale, across local authority boundaries;*
- *Promote the preservation, restoration and re-creation of priority habitats and ecological networks and the protection and recovery of priority species populations linked to national and local targets and identify suitable indicators for monitoring biodiversity in the plan.*

6.2.14. When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles (paragraph 118):

- *Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;*
- *Opportunities to incorporate biodiversity in and around developments should be encouraged.*

6.3 Assessment Methodology and Significance Criteria

Potential Impacts

6.3.1. The potential impacts, both positive and negative, associated with the development of the site for a solar PV array are considered to be as follows:

- Habitat loss or modification due to construction activities and change in land use;

- Direct harm to protected species or other species of conservation note;
- Neglect / inappropriate management of retained habitats;
- Disturbance deterring species from using habitats on site;
- Opportunities for ecological enhancement.

6.3.2. The baseline surveys and assessment methodologies described in the remainder of this section were selected in order to provide an evidence base to assess the magnitude and significance of these potential impacts.

Sources of Information

6.3.3. The assessment was informed by the following information sources:

- Extended Phase 1 habitat survey and ecological constraints assessment undertaken by ADAS in March 2011 and updated in September 2012;
- Water Vole survey undertaken by ADAS in March 2011;
- Desk study for previous records of protected and notable species, carried out by the Bristol Regional Environmental Records Centre on behalf of ADAS.

6.3.4. All surveys, as detailed in the Table 6.2, were carried out with reference to the relevant guidance.

Assessment Methodology

6.3.5. Survey work at the site was completed in accordance with standard methodologies for the type of survey in question. These are summarised on Table 6.2, as follows:

Table 6.2: Summary of Survey Methods

Survey Type	Summary of Methodology	Date(s) of completion
Desk Study	A desk study search was completed to review evidence of protected species and designated sites. This utilised the following sources; Magic website, National Biodiversity Network gateway and the Bristol Regional Environmental Records Centre (BRERC).	March 2011
Phase 1 Habitat Survey	The survey of the site was based on that of a Phase 1 Habitat survey following standard methodologies. This was extended to include notes on fauna and habitats which could potentially support protected species. Such an approach is commonly referred to as an Extended Phase 1 Habitat Survey.	March 2011, updated September 2012
Water Voles	A Water Vole survey of the ditches on and surrounding the site was undertaken following guidance from the Water Vole Conservation Handbook (2006).	March 2011

Method of Assessing Impact

6.3.6. Impacts can be either negative or positive and can vary in degree. The level of impact is also determined by the importance of the species or habitat; both referred to as receptors in the assessment process. Also considered are the degree of certainty that the impact will happen, its duration, extent, reversibility and timing or frequency.

6.3.7. Receptor value is described with reference to a five point scale from negligible, through low, medium and high, to very high, as indicated by Table 6.3 below. The method of assessment is based on IEEM (2006), which acknowledges at section 3.8 that: *“In some EIAs (or other integrated assessments), the ecologist may be required to use other approaches to assigning levels of value (in order to be consistent across different technical subjects).”*

Table 6.3: Definitions of Receptor Value (modified from IEEM (2002) and webTAG guidance)

Value	Criteria	Examples
Very high	High importance and rarity, at an international scale.	Internationally designated sites. Populations of nationally notable

	Sites supporting populations of internationally important species.	species that are important in an international context.
High	High importance and rarity at a national scale, or regional scale with limited potential for substitution.	Nationally designated sites. Regionally important sites with limited potential for substitution. Populations of nationally notable species that are important in a national or regional context.
Medium	High or medium importance and rarity, local or regional scale, with limited potential for substitution.	Regionally important sites with potential for substitution. Locally designated sites. Undesignated sites considered to be of importance at a district or county scale. Populations of nationally or regionally notable species that are important in a district or county context.
Low	Low or medium importance and rarity of importance at a local scale.	Undesignated sites of some local biodiversity interest. Populations of nationally or regionally notable species that are important in a local context.
Negligible	Very low importance and rarity, local scale.	Other sites with little or no local biodiversity interest.

6.3.8. The magnitude of impacts is assessed in terms of the following terminology (Table 6.4), (adapted from webTAG and IEEM definitions).

Table 6.4: Definitions of Impact Magnitude

Impact Magnitude	Definition
Major negative	A negative effect which threatens the continued viability of the receptor either regionally or nationally.
Moderate negative	A negative effect, but one which does not threaten the viability of the ecological receptor.
Slight negative	Effects important at a local scale but not likely to be a key factor in the decision process.
Negligible / no impact	No effect, or none of any importance to the decision making process.
Slight positive	Positive effects important at a local scale but not likely to be a key factor in the decision making process.

Moderate positive	A positive effect, but one which is not a key factor in enhancing the regional or national viability of the ecological receptor.
Major positive	A positive effect which leads to improved viability of an ecological receptor at a national or regional scale.

Significance Criteria

- 6.3.9. The significance criteria used in the assessment are indicated in Table 6.5. The matrix is based on the webTAG and IEEM guidance with modifications to terminology for the purposes of consistency with other chapters of the ES. A significant impact is deemed to be one lying in the shaded cells.

Table 6.5: Significance Matrix (adapted from IEEM and webTAG)

Magnitude of potential impact	Nature conservation value of sites/features Damaged or Improved				
	Very high	High	Medium	Low	Negligible
Major negative	Substantial adverse	Substantial adverse	Moderate adverse	Minor adverse	Neutral / Negligible
Moderate negative	Substantial adverse	Moderate adverse	Moderate adverse	Minor adverse	Neutral / Negligible
Slight negative	Moderate adverse	Minor adverse	Minor adverse	Minor adverse	Neutral / Negligible
Negligible / no impact	Neutral / Negligible	Neutral / Negligible	Neutral / Negligible	Neutral / Negligible	Neutral / Negligible
Slight positive	Moderate beneficial	Minor beneficial	Minor beneficial	Minor beneficial	Neutral / Negligible
Moderate positive	Substantial beneficial	Moderate beneficial	Moderate beneficial	Minor beneficial	Neutral / Negligible
Major positive	Substantial beneficial	Substantial beneficial	Moderate beneficial	Minor beneficial	Neutral / Negligible

6.4 Baseline Conditions

Designated Sites

- 6.4.1. The desk study indicated that within a 10km radius of the site there were three SACs one Special Protection Area (SPA) and one Ramsar site.

6.4.2. The Severn Estuary SAC and SPA is located 900m to the west at its nearest point. The Severn Estuary is also designated a Ramsar site.

6.4.3. The Mendip Limestone SAC is located approximately 800m to the east and part of the North Somerset & Mendip Bats SAC is located 5.4km north-north-east.

6.4.4. The recorded SAC's, SPA and Ramsar located within 10km of the site are listed in Table 6.6.

Table 6.6: Internationally designated sites within 10km of the site

Reference Number	Site Name	Approx Distance and Direction from the Site	
UK0013030	Severn Estuary SAC	950m	W
UK0030203	Mendip Limestone Grasslands SAC	800m	E
UK0030052	North Somerset & Mendip Bats SAC	5.4km	NNE
UK9015022	Severn Estuary SPA	950m	W
UK11081	Severn Estuary Ramsar	950m	W

6.4.5. A 2km radius search was undertaken for national designated sites. Within 2km there are three Sites of Special Scientific Interest (SSSI), with Purn Hill being the closest to the site at approximately 120 metres to the east. The SSSIs located within 2km of the development site are listed in Table 6.7. There were no records of National Nature Reserves (NNR) within a 2km radius of the site.

6.4.6. A 2km radius search was undertaken for local designated sites. Based on the MAGIC search, within 2km there was one local nature reserve (LNR), Uphill LNR, situated approximately 1km to the northwest.

Table 6.7: Sites of Special Scientific Interest located within 2km of the site

Reference Number	Site Name	Approx Distance and direction from the Site	
1002600	Severn Estuary	950m	W
1001336	Uphill Cliff	800m	NW
1001328	Purn Hill	120m	E

Non-statutory Sites

6.4.7. Sites of Interest for Nature Conservation (SINCs) are known as Wildlife Sites in North Somerset. There are eleven Wildlife Sites within 1km of the site; these are listed in the table below:

Table 6.8: Non-statutory sites within 1km of the proposed development

Site Name	Distance from site	Direction
Salt Marsh, Field & Cliff (Axe Estuary Saltmarsh)	850m	NW
Land adjacent to Severn Estuary SSSI	700m	W
Bridgwater Road verge and Oldmixon Bridge Tips	700m	N
Ditch south of the Grange near Uphill	400m	NW
Ditches to the west of Purn Farm	0m	E
Ponds at Summerways Bridge	20m	S
River Axe (part of)	300m	S
Coombe Farm drains and adjacent land	150m	N
Oldmixon to Upper Canada Scarp	900m	N
Bleadon Hill Fields	600m	E
Purn Hill	150m	E

6.4.8. The ‘Ditches to the west of Purn Farm’ Wildlife Site form part of the eastern boundary of the site. This Wildlife Site is described within the North Somerset Councils GIS database as “*standing water (ditch) and associated marginal habitats*” (North Somerset Council, *pers. comm.*).

Assessment of Value

- 6.4.9. In accordance with their designated status, all nationally and internationally designated sites are assessed as being of high or very high value.
- 6.4.10. The Wildlife sites are assessed as being of medium value (see Table 6.3).

Historic Notable Species Records

- 6.4.11. The BRERC provided a total of 5,594 notable records from within 1km of the site. This is an exceptional number of records, and probably reflects the amount of biological recording that has taken place in the area.
- 6.4.12. By far the majority of records come from the nearby Weston-super-Mare Sewage Treatment works and its associated nature reserve, though a large amount of records also come from the Walborough and Purn Hill Avon Wildlife Trust nature reserves, which are also with 1km of the site. Given the large number of biological records in the area, the following is a summary of records likely to have been collected from the site itself, or those more mobile protected or notable species that are also likely to occur on the site.
- 6.4.13. Table 6.9 shows those species recorded during a farmland survey in 2003 that probably included the site.

Table 6.9: Birds recorded during a farmland bird survey. Data from BRERC

Species	Latin Name	Group	Status*	Birds of Conservation Concern
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	Bird		
Reed Warbler	<i>Acrocephalus scirpaceus</i>	Bird	Avon BAP	

Skylark	<i>Alauda arvensis</i>	Bird	UK BAP Avon BAP	Red
Linnet	<i>Carduelis cannabina</i>	Bird	UK BAP Avon BAP	Red
Goldfinch	<i>Carduelis carduelis</i>	Bird		
Greenfinch	<i>Cardueils chloris</i>	Bird		
Robin	<i>Erithacus rubecula</i>	Bird		
Chiffchaff	<i>Phylloscopus collybita</i>	Bird		
Dunnock	<i>Prunella modularis</i>	Bird	UK BAP Avon BAP	Amber
Blackcap	<i>Sylvia atricapilla</i>	Bird		
Whitethroat	<i>Sylvia communis</i>	Bird		
Wren	<i>Troglodytes troglodytes</i>	Bird		
Blackbird	<i>Turdus merula</i>	Bird		
Song Thrush	<i>Turdus Philomelos</i>	Bird	UK BAP Avon BAP	Red
Meadow Brome	<i>Bromus commutatus</i>	Plant		

6.4.14. All the bird species in table 6.9 above are likely to breed within the site.

This includes four species listed on the UK BAP priority list and the Avon BAP, as well as one additional species that has its own Avon BAP. Three of these species are on the red list of Birds of Conservation Concern and one is amber listed.

6.4.15. Most of the bird species present on the site will utilise the ditches and or hedgerows for breeding, whereas Skylark nest on the ground in open areas. All fields within the site are arable and therefore the opportunities for ground nesting birds are entirely dependant on the

current farming regime. Ground nesting birds in arable crops are reliant on a window of non destructive farming operations during the nesting season. Examples of destructive operations include ploughing, rolling or harvesting.

6.4.16. Other notable records from within 1km of the site of species that are likely to occur within the site boundaries are listed in the table below:

Table 6.10: Notable species likely to occur within the site boundaries after analysing data from BRERC

Species	Latin Name	Group	Status*	Birds of Conservation Concern
Badger	<i>Meles meles</i>	Mammal	Protection of Badgers Act	-
Brown Hare	<i>Lepus europaeus</i>	Mammal	UK BAP Avon BAP	
Cetti's Warbler	<i>Cettia cetti</i>	Bird	Schedule 1 WCA	
Grass Snake	<i>Natrix natrix</i>	Reptile	UK BAP Avon BAP WCA	
Grey Partridge	<i>Perdix perdix</i>	Bird	UK BAP Avon BAP	Red
Hedgehog	<i>Erinaceus europaeus</i>	Mammal	UK BAP Avon BAP	
Kingfisher	<i>Alcedo atthis</i>	Bird	Schedule 1 WCA	Amber
Otter	<i>Lutra lutra</i>	Mammal	EPS WCA UK BAP Avon BAP	
Water Vole	<i>Arvicola terrestris</i>	Mammal	WCA	

			UK BAP Avon BAP North Somerset BAP	
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*Where

WCA = Wildlife and Countryside Act (1981) as amended

UK BAP = UK Priority List Biodiversity Action Plan

Avon BAP = Avon Biodiversity Action Plan

North Somerset BAP = North Somerset Biodiversity Action Plan

EPS = European Protected Species under The Conservation of Habitats and Species Regulations 2010

Habitats

- 6.4.17. The site consists of five fields. Each of these five fields consisted of Maize stubble at the time of the first Phase 1 Habitat survey and a standing Maize crop on the second. The results of the habitat survey are shown in Appendix 6.1.
- 6.4.18. There are several small patches of tall ruderal vegetation in uncropped areas of the fields. One field corner in the northeast of the site consists predominantly of Common Nettles (*Urtica dioica*), Teasel (*Dipsacus fullonun*) and Common Reed (*Phragmites australis*). Another area of ruderal vegetation is on a raised area near the Accommodation Road entrance to the site.
- 6.4.19. The fields are separated by ditches, some of which have species poor hedgerows on both or either side. All hedges on the site consist of predominantly Hawthorn (*Crataegus monogyna*) and Blackthorn (*Prunus spinosa*). There are virtually no other shrub or tree species within the hedges.
- 6.4.20. A single Willow (*Salix* sp.) is the only significant tree on the site. This is a small Willow on the boundary of the northwest corner of the site. The tree contains no features suitable for use by roosting bats.

- 6.4.21. There is a small patch of scrub on the western boundary with the railway line. This scrub contains similar species to the rest of the hedgerows on the site, with the addition of a single Apple (*Malus* sp.).
- 6.4.22. Most of the field boundary ditches are overgrown with hedgerows, limiting light penetration into the ditches and therefore lessening the amount of aquatic vegetation in the overgrown ditches. The position of hedges is marked on Appendix 6.1.
- 6.4.23. The central west to east ditch across the site is not overgrown. This ditch is marked on Appendix 6.1 as North Rhyne. On the first survey in March 2011 one of the sides of the ditch (the side varying as to each field) had been recently dredged as part of ditch maintenance. The remaining side contained abundant Common Reed. In September 2012 both sides of the ditches had abundant Common Reed.
- 6.4.24. The Wildlife Site 'ditches to the west of Purn Farm' forms part of the eastern site boundary. Where the Wildlife Site borders the site at the northern end, the ditch is overgrown with a hedgerow and there is therefore virtually no aquatic or marginal vegetation in the ditch. Where the Wildlife Site joins the site at the southern end near Accommodation Road the ditch is open on the site side, but has a hedge overgrowing the road side. In March 2011 the ditch at this point had been very recently cleared out and therefore there was no vegetation within the ditch.

Assessment of Habitat Value

- 6.4.25. The fields as arable land have very little ecological value, and are therefore classed as having negligible value using the criteria in Table 6.3.
- 6.4.26. The field boundaries consist of species poor hedgerows, which in their current state are lessening the ecological value of the ditches that they are growing over. The field boundaries which contain hedgerows and overgrowing ditches are classed as having low value, whereas the North

Rhyne, being open and having more potential for a range of aquatic species, would be classed as medium value.

Breeding Birds

- 6.4.27. From the records held by BRERC a range of breeding birds are likely to occur on site depending on the farming regime in place at the time. All the species likely to occur on the site are widespread, but some species are currently in decline.
- 6.4.28. Notable species likely to breed on the site include Skylark, Linnet, Dunnock and Song Thrush all of which are BAP Priority species (albeit still relatively common and widespread). In addition, Reed Warbler and Cetti's Warbler are both likely to occur and they may breed on site. They are Avon BAP species and Schedule 1 species respectively. Kingfisher is another Schedule 1 species that is likely to be present from time to time in the ditches within the site. There is a small possibility that this species may find one of the ditch banks suitable for creating a nest.

Assessment of Value

- 6.4.29. Due to the presence of a small number of farmland bird species and species that are likely to breed in the boundary hedges and ditches, the site was valued as low value for breeding birds.

Wintering and Migratory Birds

- 6.4.30. The site is positioned within 1km of the Weston-super-Mare Sewage Treatment works and the Axe Estuary; both are sites that are known to contain populations of wintering waders and wildfowl. The plethora of bird records held by BRERC for these two sites indicate that the area is well studied. The Axe Estuary holds locally significant wintering populations of species such as Redshank (*Tringa totanus*), Dunlin (*Calidris alpina*) and Teal (*Anas crecca*) and the Weston-super-Mare Sewage Treatment Works holds a smaller range of wintering wildfowl,

but is also known to attract a range of passage migrants. The first British record of the subspecies of American Black Tern (*Chlidonias niger surinamensis*) for example, was recorded at this site.

6.4.31. Slightly further away, the nearby Somerset coast forms part of the Severn Estuary SAC, which is known to hold populations of wintering and passage waders and wildfowl. The sandy beaches of Brean and Berrow to the west hold large flocks of Sanderling (*Calidris alba*) and other waders during passage periods.

6.4.32. The receptor of 'wintering and passage birds' is included within this ES because of possible impacts a solar PV array may have on such species that may cross the site or utilise nearby sites.

Assessment of Value

6.4.33. Due to neighbouring sites, rather than the site itself the value of the site for wintering and migratory birds is considered to be valued as medium value.

Water Voles

6.4.34. The results of the Water Vole survey in March 2011 were limited by the recent clearing out of the ditches; however Water Voles were present within the open ditch known as North Rhyne. Active Water Vole burrows, some with associated feeding remains, were present at regular intervals along North Rhyne. At the time of the updated survey in September 2012 the ditches were too overgrown to observe Water Vole signs, but are still considered to be suitable for them. It is anticipated that Water Vole were still present.

6.4.35. In addition to the presence of Water Voles on the site was the occurrence of large numbers of Brown Rats (*Rattus norvegicus*). Brown Rat runs, burrows and feeding remains were abundant among the hedgerows and fields. The presence of Brown Rats and Water Voles at

the same site suggests that the two species are coexisting, although there is likely to be some competition between the two.

- 6.4.36. It was quite noticeable that the Water Voles were present only in the open ditches (North Rhyne) whereas the Brown Rat signs were more abundant in the hedgerow covered ditches, though not exclusively so.

Assessment of Water Vole Value

- 6.4.37. The site is considered of high value for its population of Water Voles.

Other Species Considered

Great Crested Newt

- 6.4.38. The site was considered for the presence of Great Crested Newt (*Triturus cristatus*) particularly in the ditches surrounding and crossing the site. Most of the ditches on the site were observed to be flowing and likely to contain Sticklebacks (*Gasterosteus* spp.) and other small fish, which lowers the suitability of waterbodies for breeding Great Crested Newts. In addition, from the 5,594 species records from within 1km of the site, there were no records of Great Crested Newt.
- 6.4.39. A pond is present just outside the northeast corner of the site. This is marked as target note 1 (TN1) on the plan at Appendix 6.1. The pond is approximately 6m x 12m. It has a Great Crested Newt Habitat Suitability Index of 0.58, which represents a below average suitability for Great Crested Newts.
- 6.4.40. As the terrestrial site is entirely arable, except for the hedgerows and small isolated uncropped field corners, the chances of encountering Great Crested Newts on the site is very low. Arable fields have very low suitability for Great Crested Newts due to their frequent disturbance and lack of refugia.
- 6.4.41. The ditches on the site will not be affected by the proposed creation of a solar PV site, and the replacement of unsuitable arable fields with arrays

of solar panels on managed grassland would create an improved terrestrial habitat for Great Crested Newts if they were present in the vicinity.

- 6.4.42. For reasons of currently unsuitable terrestrial habitat and a net gain in the overall suitability of the site for Great Crested Newts, this species is not considered further.

Reptiles

- 6.4.43. There is a possibility that the common species of reptiles may utilise the ditches and field edges for foraging. The wet ditches are particularly suitable for Grass Snakes and they should be expected to be present.
- 6.4.44. The arable fields are not suitable for reptiles.

Assessment of Value

- 6.4.45. The value of the site for reptiles is considered to be low.

Bats

- 6.4.46. The site contains no features suitable for roosting bats, therefore there is no likelihood of affecting a bat roost on this site.
- 6.4.47. The site is approximately 5.4km from the nearest part of the North Somerset and Mendip Hills Bats SAC at Banwell Caves. A study by Duvergé and Jones (1994) found that Greater Horseshoe Bats preferred the following habitats (in descending order): pastures with cattle (either single/mixed stock), ancient semi-woodland and pastures with non-cattle stock. Arable fields were not favoured.
- 6.4.48. In order to protect Greater Horseshoe Bat colonies, Duvergé & Jones (2003) suggest that permanently grazed pastures should not be ploughed and used for arable crops and that woodland and hedgerows should be retained. Hedgerows should be approximately 4m high and 2-3m wide and should not be intensively trimmed. Important habitats within 4km of roost sites should be preserved.

- 6.4.49. The conversion of arable fields into a solar PV site would change the habitat from arable to grassland, within which the solar panels would be sited. If Greater Horseshoe Bats were to forage on the site, the net value of the site for horseshoe bats would increase with the introduction of grassland.
- 6.4.50. Duvergé & Jones (2003) also suggest that the core areas for foraging Greater Horseshoe Bats are within 4km of important roost sites, and therefore the site is outside the core area for bats from the North Somerset and Mendip Hills Bats SAC.

Assessment of Value

- 6.4.51. The value of the site for bats is considered to be low or negligible.

Badger

- 6.4.52. On the March 2011 survey there were many Badger footprints around the margins of the fields on site. It was suspected that Badgers may have been foraging on the waste Maize within the stubble. In September 2012 there were several Badger dung pits around the field margins. These are marked onto the plan at Appendix 6.1.
- 6.4.53. No Badger setts were found within the boundary of the site.

Assessment of Value

- 6.4.54. The value of the site for Badgers is considered to be low.

Otter

- 6.4.55. Otters are known to be present in the area around the site, though no Otter signs were found during the survey, despite searching. Otters are protected by UK and International legislation and they have UK and local BAPs.

6.4.56. It is however, highly likely that Otters pass through the site from time to time, utilising the ditches as movement corridors, though there were no suitable holts or other resting places on the site.

Assessment of Value

6.4.57. The value of the site for Otters is considered to be low.

Brown Hare

6.4.58. Brown Hare are likely to occur on the site as there were records within 1km and the site was potentially suitable for them. Brown Hares have UK and Avon BAPS.

Assessment of Value

6.4.59. The value of the site for Brown Hare is considered to be low, as it is dependent on the farming regime used.

Hedgehog

6.4.60. Hedgehogs are a listed in national and local BAPS. They may be present on the site.

Assessment of Value

6.4.61. The value of the site for Hedgehogs is considered to be negligible.

Overall Ecological Assessment

6.4.62. The site comprises a typical range of habitats and their dependant species. Generally the species of both plants and animals were mostly common and widespread, though there were small numbers of species present whose populations are in national decline.

6.4.63. The surveys have revealed the habitat to be generally of negligible or low ecological value, with the North Rhyne being of medium value.

Baseline Projections

- 6.4.64. In the absence of development, it is considered that the value of the application site would, in the main, remain unchanged in the short-, medium and long-term.
- 6.4.65. The hedgerows and ditches on site would retain their ecological interest in the short to medium-term. The trees and shrubs in the hedgerows will age and die, leaving gaps that may re-grow and re-colonise. The ditches depend on management to continue their effectiveness for drainage, and therefore the long-term future would depend on management continuing as at the current time.
- 6.4.66. The value of the arable fields would depend on the farming regime at the time and therefore they may increase or decrease in value from year to year.

6.5 Potential Effects

Introduction

- 6.5.1. Discussion of potential effects in this section are based on the scheme as proposed, not taking into account the mitigation recommended in Section 6.6 of this chapter.
- 6.5.2. Where potentially significant impacts are identified, mitigation and/or compensation is proposed in the following section. Residual effects are then discussed, taking account of the mitigation proposed.

Construction Phase

Designated Sites

- 6.5.3. With the exception of the 'Ditches to the west of Purn Farm' Wildlife Site, all the identified designated sites are considered to be sufficiently far away from the application site to be not directly affected by the proposed development.
- 6.5.4. Any potential indirect effects at these locations are also considered to be very unlikely to occur.

- 6.5.5. The magnitude of the predicted impact on designated sites is therefore negligible / no impact which is of **neutral / negligible significance**.

The 'Ditches to the west of Purn Farm' Wildlife Site

- 6.5.6. It is not anticipated that construction activities will directly impact the 'Ditches to the west of Purn Farm' Wildlife Site.
- 6.5.7. Slight indirect impacts may occur due to a temporary increase in noise or disturbance although these will be temporary.
- 6.5.8. Overall, the construction impacts on the Wildlife Site are predicted to be negligible / no impact of **neutral / negligible significance**.

Habitats

- 6.5.9. During construction there will be habitat loss, albeit in the main of habitat of low conservation value. This will constitute a short term, temporary impact of moderate negative magnitude, which accounting for the low or negligible value of the habitats will be of **minor adverse significance**.
- 6.5.10. There will be no impact on the field boundaries during the construction works.

Breeding Birds

- 6.5.11. In the short term there will be a slight negative impact on bird species due to the loss of foraging opportunities during the construction phase of the development. This is assessed as being of **minor adverse significance**.
- 6.5.12. If construction activities are carried out during the main breeding season (March- August inclusive), there is some potential for an offence to be committed by the destruction of active nests by staff, machinery, or vehicular movements. This requires simple, standard good practice mitigation measures to ensure that nests are not destroyed.

Wintering and Passage Birds

- 6.5.13. Populations of wintering and passage birds do not occur on the site, but they are present nearby. It is not anticipated that works on the proposed sites will affect adjacent sites, such as the Axe Estuary or the Weston-super-Mare Sewage Treatment Works. These two sites are visually separated from the proposed development site by the adjacent railway line.
- 6.5.14. There will be no effect on wintering and passage birds during construction and therefore the impact on this receptor is therefore assessed as being negligible / no impact, which is of **neutral / negligible significance**.

Water Voles

- 6.5.15. It is not predicted that the Water Voles within the ditches of the site will be affected, either directly or indirectly from the proposed development of the solar PV site.
- 6.5.16. The impact on this receptor is therefore assessed as being negligible / no impact, which is of **neutral / negligible significance**.

Reptiles

- 6.5.17. It is not predicted that reptiles within the ditches of the site will be affected, either directly or indirectly from the proposed development of the Solar PV site.
- 6.5.18. The impact on this receptor is therefore assessed as being negligible / no impact, which is of **neutral / negligible significance**.

Bats

- 6.5.19. Potential effects of the development will be confined to those on bat foraging and commuting activity.

6.5.20. The construction of the proposed development would not result in any impacts to foraging bats which would result in an impact of **neutral / negligible significance**.

Badgers

6.5.21. There will be some short term loss of Badger foraging area during construction of the development. The loss of approximately 22.5ha of arable farmland is anticipated to be of a **minor adverse impact**.

Otter

6.5.22. It is not predicted that Otters within the ditches of the site will be affected by the proposed development of the Solar PV site.

Brown Hare

6.5.23. There will be some short term loss of Brown Hare foraging area during construction of the development. The loss of approximately 22.5ha of arable farmland is anticipated to be of a slight negative impact which is of **minor adverse significance**.

Hedgehog

6.5.24. There will be some short term loss of Hedgehog foraging area during construction of the development. The loss of approximately 22.5ha of arable farmland is anticipated to be of a slight negative impact which is of **minor adverse significance**.

Operational Phase

Designated Sites

6.5.25. As with the construction impacts, the operational impacts on the designated sites are considered to be negligible / no impact of **neutral / negligible significance**.

Habitats

6.5.26. It is predicted that, with the proposal to change arable into grassland, there will be a net gain in overall biodiversity resulting in a slight positive impact.

6.5.27. This equates to an impact of **minor beneficial significance**.

Breeding Birds

6.5.28. The hedgerows and ditches will be retained and a 5m buffer strip will be retained around the field boundaries and therefore there will be no impact on species breeding within the field boundaries.

6.5.29. There may be a slightly reduced chance of ground nesting species utilising the grassland between the solar panels, however the current suitability of habitat for ground nesting species depends on the farming regime at the time.

6.5.30. Overall there is considered to be an impact on breeding birds of **neutral / negligible significance**.

Wintering and Passage Birds

6.5.31. After construction the sites will consist of an array of solar cells. Some discussion has been raised about birds being disorientated by glare from solar panels. There is no current evidence known that supports the view that solar cells distract birds. Solar cells are designed to absorb light rather than reflect it, and hence solar cells do not cause significant glare or reflection.

6.5.32. The impact to wintering and passage birds after completion of the works is predicted to be of **neutral / negligible significance**.

Water Voles

6.5.33. A 5m buffer around the field boundaries will protect Water Vole burrows which exist in the ditches. Water Vole burrows and subterranean nests can extend up to 5m from the ditch bank (Strachan and Moorhouse, 2006) therefore they would be protected from the proposed works.

6.5.34. The impact to Water Vole after completion of the works is predicted to be of **neutral / negligible significance**.

Reptiles

6.5.35. The change of habitat from arable to grassland may increase the suitability of the site for reptiles, particularly if the sward develops a tussocky structure.

6.5.36. The impact on reptiles is therefore likely to be slightly positive, which is an impact of **minor beneficial significance**.

Bats

6.5.37. The retention of the hedgerows and ditches will not cause a significant change in bat foraging, however the replacement of arable with grassland would benefit foraging bats, which feed on insects attracted to grassland.

6.5.38. There will be no artificial lighting of the site and therefore lighting will not be an issue to foraging or commuting bats.

6.5.39. Overall, the operational impact on bats is therefore considered to be of **minor beneficial significance**.

Badgers

6.5.40. The change from arable to grassland is considered to have a positive impact on Badgers because short grassland is an excellent habitat for Earthworms (Oligochaeta) which form the majority of the Badgers diet. This assumes that Badgers are able to access the site through the proposed boundary fence by means of installation of Badger gates or tunnels, or other appropriate mitigation. In the absence of such mitigation, Badgers will be excluded from the site leading to a reduction in foraging area available to them.

6.5.41. Therefore, in the absence of mitigation, the operational impact on Badgers is therefore considered to be of **minor adverse significance**.

Otter

- 6.5.42. Post development there will be virtually no disturbance to the site and therefore there will be no impact on Otters using the rhynes.
- 6.5.43. The impact to Otters after completion of the works is predicted to be of **neutral / negligible significance**.

Brown Hare

- 6.5.44. It is anticipated that Brown Hares would forage on the grassland within the solar panels, and therefore the replacement of arable with grassland would have negligible impact on hares. However, this assumes Hares will be able to access the site through the boundary fence. Without this, a reduction in foraging area will result. It may be that Brown Hares require a more open landscape than between solar panels; however it may also prove to be that hares utilise the panels for hiding between.
- 6.5.45. The impact to Brown Hares after completion of the works, in the absence of mitigation, is predicted to be of **minor adverse significance**.

Hedgehog

- 6.5.46. As with Badgers and Brown Hares, it is anticipated that Hedgehogs would forage on the grassland within the solar panels, and therefore the replacement of arable with grassland would have a minor beneficial impact on Hedgehogs, only if access was allowed through mitigation.
- 6.5.47. The impact to Hedgehogs after completion of the works is predicted to be of **minor adverse significance**.

Summary of Impacts

- 6.5.48. The predicted impacts, including the judgment of magnitude and significance are summarised in Table 6.11.

Table 6.11: Summary of Predicted Effects without Mitigation

Receptor	Value of Site	Impact Magnitude	Impact Significance
During Construction			
Ditches to the west of Purn Farm Wildlife Site	Medium	Negligible / no impact	Neutral / negligible
Other designated sites	High / Very High	Negligible / no impact	Neutral / negligible
Habitats and flora (fields)	Negligible	Moderate negative	Minor adverse
Habitats and flora (field boundaries)	Medium/Low	Negligible / no impact	Neutral / negligible
Breeding Birds	Low	Slight negative	Minor adverse
Wintering and Passage Birds	Medium	Negligible / No impact	Neutral / Negligible
Water Voles	High	Negligible / No impact	Neutral / Negligible
Reptiles	Low	Negligible / No impact	Neutral / Negligible
Bats	Low	Negligible / No impact	Neutral / Negligible
Badger	Low	Slight negative	Minor adverse
Otter	Low	Negligible / No impact	Neutral / Negligible
Brown Hare	Low	Slight negative	Minor adverse
Hedgehog	Low	Slight negative	Minor adverse
During Operation			
Ditches to the west of Purn Farm Wildlife Site	Medium	Negligible / no impact	Neutral / negligible
Other designated sites	High / Very High	Negligible / no impact	Neutral / negligible
Habitats and flora (fields)	Negligible	Moderate positive	Minor positive

Receptor	Value of Site	Impact Magnitude	Impact Significance
Habitats and flora (field boundaries)	Medium/Low	Negligible / no impact	Neutral / negligible
Breeding Birds	Low	Negligible / no impact	Neutral / negligible
Wintering and Passage Birds	Medium	Negligible / no impact	Neutral / negligible
Water Voles	High	Negligible / No impact	Neutral / Negligible
Reptiles	Low	Slight Positive	Minor positive
Bats	Low	Slight Positive	Minor positive
Badger	Low	Slight negative	Minor adverse
Otter	Low	Negligible / No impact	Neutral / Negligible
Brown Hare	Low	Slight negative	Minor adverse
Hedgehog	Low	Slight negative	Minor adverse

6.6 Mitigation Measures

During Construction and Operation

Designated Sites

- 6.6.1. The designated sites will not be impacted by the proposed development and hence no mitigation is required.

Ditches to the West of Purn Farm Wildlife Site

- 6.6.2. There will be a 5m undeveloped buffer between the ditch bank and the access road during construction and thereafter. This would protect the Wildlife Site.

- 6.6.3. It is anticipated that regular clearing out and maintenance of the drainage ditches, including the Wildlife Site will continue as at the current time. It will be necessary to manage the Wildlife Site to maintain its integrity as a drainage rhyne. If it ceases to be managed sympathetically, it may become blocked, overgrown and less attractive as standing water and marginal habitats.
- 6.6.4. No construction traffic will be permitted to travel over or through the Wildlife Site and the 5m buffer will be maintained to prevent accidental transgression into the Wildlife Site.
- 6.6.5. Where practical, all site compounds and storage areas will be stored away from the Wildlife Site to ensure that disturbance is minimised as far as possible.
- 6.6.6. The adoption of these measures will ensure that the impact on the Wildlife Site will remain of negligible / no impact magnitude, which is of **neutral / negligible significance**.

Habitats

- 6.6.7. No habitat of value will be lost as the solar panels will be constructed on arable land, which would be converted to grassland that could be used for sheep grazing. It is likely that there will be an increase in species diversity in the grassland over arable crop, especially if a species rich sward is planted.
- 6.6.8. With the change in habitat from arable to grassland. The post-mitigation impact will therefore remain of minor positive magnitude of **minor positive significance**.

Breeding Birds

- 6.6.9. Mitigation / compensation measures will focus on those species likely to lose potential nesting and foraging habitat as a result of the proposed development.

6.6.10. It is recommended that site clearance activities should take place outside of the main bird breeding season (March- August inclusive). If this is not feasible, a thorough search for active nests must be conducted immediately prior to work commencing in that specific area. If any active nests are found all work must cease in that area until the nest is no longer in use. If there are any doubts about the status of a nest or area of potential nesting habitat, then a qualified ecologist should be contacted.

6.6.11. Following the adoption of these measures there will continue to be negligible or no impact to breeding birds during or after construction which is of **neutral / negligible significance**.

Wintering and Passage Birds

6.6.12. No mitigation is proposed for wintering or passage birds.

Water Voles

6.6.13. Water Voles will be protected from development by a 5m buffer around the field boundaries. Vehicle movements generated by the site once it is operational will likely be less than those currently associated with arable cropping.

6.6.14. No additional Water Vole mitigation is required and therefore there will continue to be negligible or no impact to Water Voles during or after construction which is of **neutral / negligible significance**.

Reptiles

6.6.15. No mitigation is proposed for reptiles.

Bats

6.6.16. There is no specific mitigation proposed for bats either during or after completion of the development.

Badger

- 6.6.17. The installation of the security fence may potentially prohibit badgers access to foraging areas. As there are no setts on site, a badger survey has not been carried out. However, badger gates or tunnels will be placed in the fence at intervals around the site to allow continued access by badgers.
- 6.6.18. Following appropriate mitigation due to the conversion of arable fields into grassland, and therefore greater foraging opportunities, it is anticipated that there will be a 'slight positive' magnitude of impact of **minor beneficial significance** on Badgers.

Otter

- 6.6.19. The 5m buffer around ditches will ensure that periodic use of the rhyes by Otters will not be directly affected by the proposed development. To minimise the risk of disturbance to Otter, the site will not be artificially lit at night and no night time working will take place during construction.
- 6.6.20. There will continue to be negligible or no impact to Otters during or after construction which is of **neutral / negligible significance**.

Brown Hare

- 6.6.21. No mitigation is proposed for Brown Hare.

Hedgehog

- 6.6.22. When erecting the boundary fence a 100mm gap should be left at the base of the fence to allow access for Hedgehogs to the new grassland area.
- 6.6.23. Following the adoption of these measures there will be a 'slight positive' magnitude of impact to Hedgehogs of **minor beneficial significance**.

6.7 Residual Effects

- 6.7.1. No significant residual negative effects are predicted to occur as a result of the proposed development.

6.7.2. There will be a loss of arable farmland but a gain in grassland habitat which could be used for sheep grazing. This habitat gain will reflect in an improvement in habitat for several species likely to occur on the site.

6.8 Summary of Residual Impacts

6.8.1. The residual impacts are summarised in Tables 6.12 and 6.13.

Table 6.12: Summary of residual impacts

Receptor	Probability	Effect After Mitigation	Duration of Impact	Permanence
During Construction				
Ditches West of Purn Farm Wildlife Site	Likely	Neutral / negligible	Short-term	Temporary
Other Designated Sites	Certain	Neutral / negligible	Short-term	Temporary
Habitats	Certain	Minor adverse	Short-term	Temporary
Breeding Birds	Likely	Neutral / negligible	Short-term	Temporary
Wintering and Passage Birds	Likely	Neutral / negligible	Short-term	Temporary
Water Voles	Likely	Neutral / negligible	Short-term	Temporary
Reptiles	Likely	Neutral / negligible	Short-term	Temporary
Bats	Likely	Neutral / negligible	Short-term	Temporary
Badger	Likely	Minor adverse	Short-term	Temporary
Otter	Likely	Neutral / negligible	Short-term	Temporary
Brown Hare	Likely	Minor adverse	Short-term	Temporary
Hedgehog	Likely	Minor adverse	Short-term	Temporary

Table 6.13: Summary of residual impacts

Receptor	Probability	Effect After Mitigation	Duration of Impact	Permanence
During Operation				
Ditches West of Purn Farm Wildlife Site	Likely	Neutral / negligible	Long-term	Permanent
Other Designated Sites	Certain	Neutral / negligible	Long-term	Permanent
Habitats	Likely	Minor positive	Long-term	Permanent
Breeding Birds	Likely	Neutral / negligible	Long term	Permanent
Wintering and Passage Birds	Likely	Neutral / negligible	Long-term	Permanent
Water Voles	Likely	Neutral / negligible	Long-term	Permanent
Reptiles	Likely	Neutral / negligible	Long-term	Permanent
Bats	Likely	Minor positive	Long-term	Permanent
Badger	Likely	Minor positive	Long-term	Permanent
Otter	Likely	Neutral / negligible	Long-term	Permanent
Brown Hare	Likely	Neutral / negligible	Long-term	Permanent
Hedgehog	Likely	Minor positive	Long-term	Permanent

7. Archaeology and Cultural Heritage

7.1 Introduction

7.1.1. This chapter summarises the outcomes of the Historic Resource Desk-based Assessment. The report assesses the impact that the proposed solar PV array may have on the historic environment resource at the site. The nature and extent of the recorded archaeological resource within the site and immediate environs is identified and a visual impact assessment of the effect of the proposed development upon statutory heritage assets in the environs of the site is undertaken.

7.1.2. The full desk-based assessment (DBA) is included in Appendix 7.1.

7.1.3. Methodology

7.1.4. The scope of the assessment identifies the cultural heritage resource, assesses the likely impact of the proposed development on it and provides recommendations for any mitigation strategies that may be appropriate.

7.1.5. Two study areas were identified: an inner and outer study area. The former is a 1.5km buffer zone around the site, the latter a 5km buffer zone around the site.

7.1.6. A number of sources were consulted to inform the assessment and included:

- Site visit conducted in October 2012;
- Historic Environment Records;
- Cartographic sources;
- Documentary sources; and
- Legislation and planning documents.

7.1.7. All identified heritage assets that may be impacted have been assigned a level of importance (or value). Definitions are set out in Table 1 of the

appended DBA. Sensitivity of the assets is related to their setting, which refers to the surroundings in which the asset is experience. Setting can have a positive or negative effect on the asset.

7.1.8. Magnitude of impact is defined in Table 2 of the DBA and significance of impact is defined in Table 3.

7.2 Assessment of Resource

7.2.1. No designated heritage assets have been identified within the site. The nearest asset is a Grade II Listed farm house located 750m east of the site. There are a further ten Scheduled Monuments, two Grade I and eight Grade II listed buildings within the study areas.

7.2.2. There are also no records of archaeological investigation from within the site. Seven records of archaeological investigation exist from within the study areas and are summarised below:

- Three antiquarian excavations carried out in 1819 of three round barrows located between 1.1km and 1.3km north of the site;
- One archaeological monitoring of ground works 700m east of the site;
- Three trial trenching exercises: two carried out 800m and 1.2km north of the site; the third 1.3km east.

Palaeolithic (650,000 – 8,500 BC)

7.2.3. No records from this period exist for the site or the study area.

Mesolithic (8,500 – 4,000 BC)

7.2.4. One find record exists from this period approximately 1.2km north east of the site and consists of a recovered flint scatter.

Neolithic (4,000 – 2,400 BC)

7.2.5. One find record exists for this period approximately 1km north of the site and consists of an arrowhead and other flint flakes.

Bronze Age (2,400 – 700 BC)

- 7.2.6. Six records exist from this period. Five of these are probable Bronze Age barrow sites approximately 1.3km north west and north east of the site. The sixth record consists of a significant quantity of Prehistoric pottery associated with a trial trenching exercise 800m north of the site.

Iron Age (700 BC – AD43)

- 7.2.7. Four records exist from this period consisting of two Iron Age or Roman period field systems approximately 800m and 1.3km north east of the site and the location of Iron Age burials and occupation within Bleadon.

Romano British (AD43 – 410)

- 7.2.8. Six records exist from this period. A large quantity of potsherds were found 700m north of the site; an inhumation burial and possible Roman camp are located 600m north east. Potential Roman field systems are recorded on Bleadon Hill 1km north east and a series of Roman finds are recorded from Purn Hill 500m east of the site. Finally, Roman pottery finds are recorded from Uphill Grange 900m north west of the site.

- 7.2.9. These records provide evidence of settlement activity from this period in the wider area.

Early Medieval (AD410 – 1066)

- 7.2.10. Two records exist from this period, consisting of a manor house and a church in Bleadon 1.3km east of the site.

Medieval (AD 1066 – 1539)

- 7.2.11. Ten records exist from this period, likely resulting from concentrated research effort at known sites, rather than providing evidence of widespread settlement during this period.

Post Medieval and 19th Century (AD1539 – 1900)

- 7.2.12. A significant number of records exist from this period, relating to public buildings and residences as well as some industrial buildings.

Modern (AD1900 – present)

7.2.13. Eight records exist from this period relating to WWII defensive features.

7.3 Assessment of Impacts Discussion

7.3.1. Evidence suggests that the site was part of a wetland landscape, drained and used as agricultural land during the Roman period. The site was probably inundated during the late Roman/early Post Roman period. This may have covered any deposits with 1m of alluvium. The site was again drained in the Post Medieval period and has been used as farmland since. The site has experienced ploughing but it is unlikely that this will have affected potential Roman period archaeology.

7.3.2. Impacts can arise directly from construction activities which necessitate the removal or truncation of below ground archaeological potential. Indirect impacts arise from changes to the setting of an asset.

Designated Heritage Assets

7.3.3. There are no designated heritage assets on site; therefore there will be no direct impacts on any designated heritage assets.

7.3.4. Brean Down, a Scheduled Monument containing elements from the Neolithic to World War II periods including buildings and earthworks, is located 3.2km north west of the site on a promontory. The proposed site is visible from this asset. Due to the distance between the site and the asset, in addition to the low height of the proposed development, it is considered that the proposed development would have **no impact** on the setting of Brean Down Scheduled Monument.

7.3.5. The Scheduled Monument of Brent Knoll is a large univallate hill fort located 6km south of the proposed site and comprises a series of large earthwork banks. Though the site will be visible from this asset, it is considered there will be **no impact** on the setting of the site. This is due to the distance between the site and the asset, the low height of the

proposed site and the presence and visual impact of existing linear development in the landscape (particularly the M5 motorway).

- 7.3.6. Bell Barrow is a Scheduled Monument located 1.2km north west of the site and comprise and upstanding barrow. Damage likely caused by past partial excavations has reduced the monuments sensitivity to change. The monument sits on the edge of an area of higher ground which makes it visible from the surrounding landscape. Its setting has already been affected by the development of the sewage works and the railway line, which has further reduced the monuments sensitivity to change. The proposed solar PV array will be visible from the monument. Due to the low height of the solar PV array, it is considered that development of the site will result in minor change to the setting of the Scheduled Monument, which gives rise to a **minor adverse** impact.
- 7.3.7. Views of the site from Listed Buildings within 5km of the site are severely restricted or obscured as a result of natural topography, intervening structure or vegetation. It is therefore considered that the development will have **no impact** on the setting of any Listed Building.

Undesignated Heritage Assets

- 7.3.8. The site has a moderate archaeological potential for the Neolithic, Iron Age and Roman periods. Archaeology of Neolithic and Iron Age dates would be of a high regional significance; archaeology of a Roman date would be high local significance. It may therefore be appropriate for archaeological monitoring of ground works to take place during the construction period to record any archaeological deposits or artefacts that may be revealed. There is a low archaeological potential for other periods.

7.4 Conclusions

- 7.4.1. There are no Designated Heritage Assets on site and therefore there will be no direct impact as a result of the proposed development. The site will have a **minor adverse** impact on the setting of a Scheduled

Monument located 1.2km northwest of the site. There will be **no impact** on the setting of any other designated heritage asset.

- 7.4.2. The development is likely to have a relatively low below ground impact. It would therefore be considered appropriate that archaeological monitoring of ground works takes place during construction of the foundations for the grid connection cubicles. Additional non intrusive survey may be required, most likely secured as a planning condition, for the rest of the site.

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