

Caulmert Limited

Engineering, Environmental & Planning
Consultancy Services

LAND AT PICKHILL BRIDGE FARM, CROSS LANES, WREXHAM

EARTHWORM ENERGY PLC LTD

**USE OF LAND FOR THE ERECTION OF A SOLAR PHOTOVOLTAIC ARRAY UP TO
4MW IN CAPACITY, INCLUDING METERING AND INVERTER KIOSKS, SECURITY
CAMERAS, FENCING AND GATES AND A TEMPORARY CONSTRUCTION
COMPOUND AND ACCESS TRACK.**

SUPPORTING PLANNING STATEMENT

Prepared by:

Caulmert Limited

8 St Georges Court, Altrincham Business Park, Dairyhouse Lane, Altrincham, Cheshire, WA14 5UA

Tel: 0161 928 6886

Fax: 0161 928 6887

Email: jennycoxon@caulmert.com

Web: www.caulmert.com

Document Reference: 2204.01.EWPLC.JC HJ.A0

April 2015

APPROVAL RECORD

Site: Land at Pickhill Bridge Farm, Cross Lanes, Wrexham
Client: Earthworm Energy plc Ltd
Project Title: Pickhill Bridge Farm Solar PV
Document Title: Supporting Planning Statement
Document Ref: 2204.01.EWPLC.JC.HJ.A0
Report Status: Final
Project Director: Howard Jones
Project Manager: Jenny Coxon
Caulmert Limited: 8 St Georges Court, Altrincham Business Park, Dairyhouse Lane, Altrincham, Cheshire, WA14 5UA
Tel: 0161 928 6886

Author	Jenny Coxon, Senior Planner	Date	2 nd April 2015
Reviewer	Howard Jones, Director of Planning	Date	3 rd April 2015
Approved	Howard Jones, Director of Planning	Date	3 rd April 2015

DISCLAIMER

This report has been prepared by Caulmert Limited with reasonable skill, care and diligence in accordance with the instruction of the above named client and within the terms and conditions of the Contract with the Client.

The report is for the sole use of the above named Client and Caulmert Limited shall not be held responsible for any use of the report or its content for any purpose other than that for which it was prepared and provided to the Client.

Caulmert Limited accepts no responsibility of whatever nature to any third parties who may have been made aware of or have acted in the knowledge of the report or its contents.

No part of this document may be copied or reproduced without the prior written approval of Caulmert Limited.

TABLE OF CONTENTS**PAGE NO.**

1.0	INTRODUCTION	1
1.1	Background	1
1.2	EIA Screening	1
2.0	THE APPLICATION SITE	2
2.1	Location	2
2.2	Site Access.....	3
2.3	Topography	3
2.4	Vegetation	3
2.5	Hydrology.....	3
2.6	The Surrounding Area.....	3
2.7	Sensitive Residential Receptors	4
2.8	Landscape Designations	4
2.9	Environmental Designations	4
2.10	Heritage Designations	4
2.11	Planning History	5
3.0	PROPOSED DEVELOPMENT.....	6
3.1	Overview.....	6
3.2	Design and Scale.....	6
3.3	Power Output and Carbon Displacement.....	8
3.4	Operations	8
3.5	Benefits of Solar Energy.....	8
3.6	Agricultural Use.....	9
4.0	PLANNING POLICY	10
4.1	National Planning Policy.....	10
4.2	Local Planning Policy.....	10
4.3	Other Material Considerations.....	11
4.4	Summary.....	13
5.0	PLANNING APPRAISAL.....	14
5.1	Introduction	14
5.2	Principle of Development	14
5.3	Landscape and Visual Impact.....	15
5.4	Agricultural Land	17
5.5	Access and Traffic.....	17
5.6	Acoustic Considerations	20
5.7	Hydrology.....	21
5.8	Ecology.....	21
5.9	Sensitive Human Receptors	22
5.10	Archaeology and Cultural Heritage	22
5.11	Glint and Glare	23

5.12	Restoration	24
6.0	THE PLANNING BALANCE	25
7.0	CONCLUSIONS	27

FIGURES

FIGURE 1 – Site Location	2
FIGURE 2 – Proposed Delivery Route	19

APPENDICES

Appendix 1 – EIA Screening Request, Caulmert Ltd, 5th December 2014

Appendix 2 – EIA Screening Opinion, Wrexham County Borough Council, 5th January 2015

1.0 INTRODUCTION

1.1 Background

1.1.1 Caulmert Ltd has been appointed by Earthworm Energy plc Ltd (“the applicant”) to submit an application to Wrexham County Borough Council for a proposed development of a solar photovoltaic array at land at Pickhill Bridge Farm, Cross Lanes, Wrexham.

1.1.2 The full description of the proposed development is for the;

“Use of land for the erection of a solar photovoltaic array, up to 4MW in capacity, including metering and inverter kiosks, security cameras, fencing and gates, and a temporary construction compound and access track.

1.1.3 The proposed solar array covers approximately 6.8ha of agricultural land.

1.1.4 This planning application is accompanied by and should be read in conjunction with the following documentation;

- Completed Planning Application Forms;
- Planning Application Drawings;
 - 2204.PLG.01 Site Location Plan
 - 2204.PLG.02 Site Application Boundary
 - 2204.PLG.03 Site Layout Plan
 - 2204.PLG.04 Typical Site Section
 - 2204.PLG.05 Typical Elevation of Site
 - 2204.PLG.06 Typical Image of Solar PV
 - 2204.PLG.07 Plan and Elevations of Inverter
 - 2204.PLG.08 Proposed CCTV Camera Details
 - 2204.PLG.09 Proposed Fencing and Gate Details
- Supporting Planning Statement (this document)
- Design and Access Statement;
- Agricultural Land Classification – Soil Environment Services Ltd, February 2015;
- Landscape and Visual Impact Assessment –Tirlun Barr Associates, February 2015;
- Extended Phase 1 Habitat Survey – Etive Ecology, February 2015; and
- Cultural Heritage Desktop Assessment – Cotswold Archaeology, February 2015.

1.2 EIA Screening

1.2.1 Given the land take of the application proposal, a Screening Opinion was formally requested from Wrexham County Borough Council to determine if an EIA to accompany the development proposal was necessary. The request was submitted on 5th December 2014 and the Screening Opinion was subsequently received from the LPA on 5th January 2015.

1.2.2 To summarise, the Council considered that an Environmental Impact Assessment was not required due to development being unlikely to have significant environmental impacts of more than local importance.

1.2.3 A copy of the applicants request and council’s opinion are provided within the appendices.

2.0 THE APPLICATION SITE

2.1 Location

- 2.1.1 The site is located approximately 5km south-east of Wrexham and 1.7km to the north-east of Cross Lanes. The site is located immediately south of the River Clywedog, approximately 200m from the developed edge of Wrexham Industrial Estate.

The location of the site is shown on the enclosed Drawing Number 2204.PLG.01 and on figure 1 below;

Figure 1 – Site Location



- 2.1.2 The site is centred on National Grid Reference SJ387486 at an altitude of between approximately 25m and 30m AOD.
- 2.1.3 The proposed solar array comprises a single rectangular shaped field covering approximately 6.8ha of agricultural land. The application site as a whole including the access to the adopted highway is 7.6ha.

2.1.4 There is a small pond in the south-west of the site.

2.2 Site Access

2.2.1 The site is accessed by an adopted unclassified track which runs due north from the B5130 at Talwrn, through Parkey Lodge Farm. Beyond Parkey Lodge an un-adopted track (Footpath ABE/19) provides access to the application site.

2.2.1 A single Public Footpath (ABE/19) runs to the north and west of the site approximately 150-200m linking the industrial estate to the existing access road and onwards to the B5130 in the south.

2.3 Topography

2.3.1 The site is predominantly flat descending gently towards the River Clywedog in the north. There are no significant gradient changes on site that would affect the proposed development.

2.4 Vegetation

2.4.1 The site is bordered by a well-established hedgerow measuring approximately 2.5m in height on all sides, and with numerous mature and semi-mature trees either within or just outside of the hedgerow.

2.5 Hydrology

2.5.1 There is a small pond in the south-west of the site.

2.5.2 The site does not lie within a flood zone and as such is not considered to be at risk of flooding.

2.6 The Surrounding Area

2.6.1 The site is surrounded by grazing pasture land on all sides.

2.6.2 The River Clywedog follows a meandering course to the north and east of the application site, and both banks of the watercourse are lined with mature trees.

2.6.3 Wrexham Industrial Estate is located approximately 200m to the north of the application site. This contains numerous large industrial and commercial buildings, as well as the site of the recently approved large scale prison on Bridge Road (Application Reference P/2013/0671).

2.6.4 Approximately 500m to the south east of the application site is Pickhill Bridge Farm, to which the site is connected to via a single track, which partly abuts the sites northern boundary.

2.6.5 Approximately 400m south-west of the site is Parkey Lodge Farm and further south at approximately 600m from the site is Nant Cottage. These residential properties are located along the proposed site access, and are the residential properties to the site.

2.6.6 Approximately 500m south-west of the site is the Wales and West Gas Plant.

- 2.6.7 Approximately 400m to the south of the site is Peter's Dingle (a Local Wildlife Site), a wooded riparian corridor which runs west from the River Clywedog. This screens the site from receptors to the south. To the south of Peters Dingle is agricultural land, and beyond this the B5130 which contains a small number of sporadic residential properties.

2.7 Sensitive Residential Receptors

- 2.7.1 The closest third party residential dwelling to the site is Parkey Lodge, some 220m south west from the site boundary. This property, together with all other surrounding properties have been included in the LVIA which accompany this application.

2.8 Landscape Designations

- 2.8.1 The southernmost 150m of the application site falls within a Special Landscape Area, as defined on Wrexham's UDP proposals map.
- 2.8.2 There are no statutory landscape designations covering the site or within 1km of the site that are recognised at national, regional and local level.

2.9 Environmental Designations

- 2.9.1 There are no statutory sites for nature conservation located within 1km of the site.
- 2.9.2 The following two non-statutory sites for nature conservation are located within 1km of the site:
- *Wrexham Industrial Estate Local Wildlife Site (LWS)* located 100m to the north-east of the site. A former industrial site which forms one of a network of sites across the Wrexham Industrial Estate supporting species such as water vole, otter, bats, breeding birds, Great Crested Newts and locally important invertebrate assemblages.
 - *Peter's Dingle LWS* located 400m to the south of the site. The designation covers a wooded riparian corridor approximately 750m in length and including stands of ancient woodland.
- 2.9.3 There are four blocks of Ancient semi-natural Woodland within 1km of the site, all of which are at least 400m to the south of the site and lie alongside the water-course corridor.

2.10 Heritage Designations

- 2.10.1 No World Heritage Sites, or sites included on the Tentative List of Future Nominations for World Heritage Sites, Scheduled Monuments, Registered Parks and Gardens, Registered Battlefields or Conservation Areas are situated within the site or within the 1.5km study area of the cultural heritage assessment which accompanies this application.
- 2.10.2 Whilst there are four Grade II Listed Buildings close to the southern edge of the study area, there are no Listed Buildings situated within or immediately adjacent to the site.
- 2.10.3 A number of non-designated heritage assets were recorded within and adjacent to the site, associated with the former Royal Ordnance Factory at Marchwiell, within which the site

partially lies. The Heritage Desk-Based Assessment provides an assessment of the significance of these, and the impact of the proposed development on that significance.

2.11 Planning History

2.11.1 There is no relevant planning history on the proposed site.

3.0 PROPOSED APPLICATION

3.1 Overview

- 3.1.1 The application proposal is to install a ground mounted solar PV array with a capacity of up to 4 MW, set across approximately 6.8ha of agricultural land.
- 3.1.2 The proposals constitute the installation of Photovoltaic (PV) panels laid out in arrays (rows) running across the site, at a distance of 8m apart. Each array will be mounted on a simple metal framework. The distance between arrays responds to the change in ground levels across the site and the need to eliminate overshadowing of panels.
- 3.1.3 Ancillary development including metering and inverter kiosks, security measures such as fencing/gating and CCTV, and a temporary construction compound and access track are also proposed.

3.2 Design and Scale

PV Modules

- 3.2.1 The PV modules will generate electricity with no air emissions, no waste production and no water use. The modules are frameless and fixed to a simple galvanised steel supporting frame.

PV Arrays

- 3.2.2 The metal frameworks that house the Photovoltaic (PV) cells will be supported at intervals by posts which are driven into the ground at a depth of between 1 to 1.5m. The solar panels will be installed at 25 degrees from the horizontal facing south in order to maximise exposure to solar radiation. The panels would be mounted at around 0.8 metres from the ground at the lowest point (the southern edge). The maximum height of the arrays will respond to the site's topography and will be a maximum height of 2.1m above ground level.
- 3.2.3 In addition there will be conduits, set at a depth of about 1m, running between the arrays to safely house the connecting cables. These will be linked to inverters and small cabins which house necessary equipment.

Inverters

- 3.2.4 The solar array requires four inverter kiosks which will be located at each corner of the site. The stations comprise an intelligent inverter system and a small transformer. The inverter is a power conversion device which changes the direct current (DC) generated by the PV modules into grid-compliant alternating current (AC) and feeds this into the local electricity distribution network. The transformer is an electrical device that alters the ratio of current and voltage in power to meet the requirements of transmission grids and devices.
- 3.2.5 The inverter stations are 2.4m wide, 2.5m high and 6.1m in depth and finished in a grey colour. The platforms will be installed on a concrete foundation excavated to a depth of approximately 0.5m. Details and elevations of the inverters are available within drawing PLG.06.

Security Fencing

- 3.2.6 For security and safety purposes the solar array will be closed to the general public throughout the construction and operation phases via security fencing and a locked access gate. A 2.4m high security fence will be installed around the perimeter of the solar array (refer to drawing PLG.08). The fence will be placed around the site at the start of the construction programme and will remain for the duration of the operation of the solar array. The fence will be designed to allow small animals to pass through the site and will be placed behind existing hedges to ensure it blends into the natural setting and existing environment.

Security Cameras

- 3.2.7 In order to deter criminal activity and vandalism and to monitor the health of the solar array, CCTV cameras pointing into the solar array will be installed within the security fencing. The CCTV cameras will be a mixture of thermal cameras and day/night cameras mounted on poles up to a maximum of 5m in height (refer to drawing PLG.07). It is proposed that there will be 2 security cameras, one in the north-east corner of the site and the other in the south-west corner of the site, located adjacent to the proposed inverter kiosks. During operation of the site, there will be no external artificial lighting.

Buffer Zones

- 3.2.8 Following consultation with Wrexham Council's Ecologist, the following buffers have been applied to the proposed layout in line with BRE National Solar Centre Biodiversity Guidelines:
- 7m ungrazed buffer between the hedgerow and the proposed security fence;
 - 5m buffer between the proposed security fence and the proposed solar array; and
 - 12m buffer between the pond and the proposed solar array.

Temporary Construction Compound

- 3.2.9 To ensure the efficient management of the construction phase, a temporary construction compound measuring approximately 30m x 30m will be set up for the duration of the estimated 12 week construction phase. The compound area will comprise:
- Construction worker welfare facilities;
 - Site office;
 - Contractor parking; and
 - Plant and machinery secure storage shed.
- 3.2.10 The construction compound will require the laying of either a system similar to Box Trakpanel (a temporary roadway and walkway) system or the removal of the top soil and the provision of a hard corded area. The construction compound is temporary in nature and will be fully dismantled and removed after the construction period. At the end of the construction period the area will be immediately restored to its original condition.

3.3 Power Output and Carbon Displacement

- 3.3.1 Utilising updated figures of average UK household electricity consumption of 4,266 kWh per annum¹ and a 10% capacity factor, computer based assessment calculates that the proposal could, each year, supply the average annual domestic needs of approximately 820 homes².
- 3.3.2 The anticipated CO₂ saving of generation by using a static level of 430g of CO₂ per kWh would be some 1,500 tonnes³ of CO₂ emissions per annum and 37,500 tonnes⁴ over the expected 25 year operating period.
- 3.3.3 Significant emission savings of NO_x and SO₂ will also result over the lifetime of the solar array. Once constructed, solar electricity generation produces no carbon, nitrogen or sulphur emissions.

3.4 Operations

- 3.4.1 The development is expected to generate renewable energy for 25 years. After this time, the frame mounts can be 'pulled' out from the ground and the site restored to productive agricultural use.
- 3.4.2 The development proposal, by virtue of its design and installation methodology, has a low impact on existing ground conditions and does not require any substructure foundations. This makes the removal and land restoration relatively easy and quick.

3.5 Benefits of Solar Energy

- 3.5.1 Producing energy through the use of Photovoltaic (PV) arrays is considered to be one of the most sustainable forms of energy production currently available. This is because they emit no pollution, produce no greenhouse gases, and use no finite fossil-fuel resources. Additionally, given the minimal maintenance required, lack of noise emission and low height of the arrays, the system causes no disturbance to its surrounds.
- 3.5.2 In addition, it is widely accepted that climate change is happening and a key contributory factor is carbon emissions from the use of fossil fuels. The increased production of energy from renewable sources, such as solar PV, has very real benefits in off-set savings in carbon dioxide emissions and reducing the potential impact of greenhouse gases on climate change. The energy generated by the development proposal may have otherwise been generated by fossil fuels at a much greater risk to the environment.

¹ DECC, 2012: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/49418/4820-subnat-auth-electricity-cons-2005-2010.xls

² The sum used to estimate the number of homes-powered is: 4MW x 0.10 CF x 8760 hours x 1000/ 4.27MWh annual consumption. This sum uses the UK average domestic electricity consumption of 4,266kWh per annum and a 10% capacity factor.

³ The sum used to estimate total carbon-savings is 4MW x 0.10 capacity factor x 8760 hours x 430 /1000. The calculation uses the 430g CO₂/kWh statistic endorsed by DECC for grams of CO₂ emitted when generating 1kWh of electricity. Source: DEFRA 2012 - http://www.decc.gov.uk/assets/decc/what%20we%20do/supporting%20consumers/saving_energy/analysis/fes-appendix.pdf

⁴ The sum used to estimate total carbon-savings is 4MW x 0.10 capacity factor x 8760 hours x 430 /1000 x 25 years. The calculation uses the 430g CO₂/kWh statistic endorsed by DECC for grams of CO₂ emitted when generating 1kWh of electricity. Source: DEFRA 2012 - http://www.decc.gov.uk/assets/decc/what%20we%20do/supporting%20consumers/saving_energy/analysis/fes-appendix.pdf

3.6 Agricultural Use

- 3.6.1 The site is currently used for the grazing of sheep, with the exception of a 1.4ha fenced off area in the north of the site, which has recently been converted from grassland to provide crop, thought to be corn.
- 3.6.2 The whole of the 6.8ha will not be required for construction of the solar array therefore, a significant proportion of the site will be retained as grassland and will be grazed by sheep. The sheep will help control the growth of grass at the site. The solar panels pose no risk to livestock and there are numerous examples across the UK where sheep graze between panel arrays.
- 3.6.3 The site will be returned to full agricultural use after 25 years.

4.0 PLANNING POLICY

4.1 National Planning Policy

Planning Policy Wales

- 4.1.1 Planning Policy Wales (Edition 7) (“PPW”) was updated most recently in July 2014 and sets out the land use planning policies of the Welsh Government.
- 4.1.2 PPW confirms that promoting sustainable development is central to the planning system and that planning policies, decisions and proposals should, inter alia, *“support the need to tackle the causes of climate change by moving towards a low carbon economy. This includes facilitating development that reduces emissions of greenhouse gases in a sustainable manner, provides for renewable and low carbon energy sources at all scales and facilitates low and zero carbon developments”*.
- 4.1.3 PPW emphasises that agricultural land of grades 1, 2 and 3a should be protected from development, because of its special importance.

TAN8: Planning for Renewable Energy

- 4.1.4 TAN8 on Planning and Renewable Energy relates to the land use planning considerations of renewable energy. With regard to solar thermal and solar photovoltaic, TAN8 confirms that *“other than in circumstances where visual impact is critically damaging to a listed building, ancient monument or a conservation area vista, proposals for appropriately designed solar thermal and PV systems should be supported”*.

4.2 Local Planning Policy

Wrexham Unitary Development Plan 1996 – 2011

- 4.2.1 The statutory Development Plan for the area within which the application site is located comprises the Wrexham Unitary Development Plan 1996 – 2011 (“the UDP”), which was adopted in February 2005.
- 4.2.2 The site of the proposed solar array is located in “open countryside” outside the defined settlement boundaries. The site is unallocated on the Local Plan Proposals Map, with the exception of the southernmost 150m of the site which falls within a Special Landscape Area.
- 4.2.3 Strategic Policy PS2 requires that development must not materially detrimentally affect countryside, landscape/townscape character, open space or the quality of the natural environment.
- 4.2.4 Strategic Policy PS12 confirms that proposals for the generation of energy from renewable sources will be supported, provided that the wider environmental benefits are not outweighed by any detrimental impacts of the proposed development.
- 4.2.5 Policy EC2 confirms that development on agricultural land of grades 1, 2 or 3a will only be permitted if it does not lead to the irreversible loss of that land.

- 4.2.6 Environment and Conservation Policy EC4 confirms that development proposals should provide for the conservation and management of hedgerows, trees, orchards, woodland, wildlife and other natural landscape and water features, and include new planting in order to enhance the character of the landscape and townscape.
- 4.2.7 Policy EC5 confirms that within Special Landscape Areas development other than for agriculture, small-scale farm-based and other rural enterprises, and essential operational development by utility service providers, will be strictly controlled. Within these areas, priority will be given to the conservation and enhancement of the landscape, development will be required to conform to a high standard of design and landscaping, and special attention should be paid to minimising its visual impact.
- 4.2.8 Policy EC11 which relates to archaeology is clear that development that directly affects non-scheduled sites of archaeological importance will only be permitted if an archaeological investigation has been carried out.

4.3 Other Material Considerations

The Climate Change Act 2008

- 4.3.1 In 2008 the Government signed up to the Climate Change Act which commits the UK to reducing its carbon emissions by at least 80% (lower than 1990 baseline) by 2050.

The Energy Bill (2012 -2013)

- 4.3.2 The Energy Bill 2012-2013 proposes the closure of a number of coal and nuclear power stations over the next two decades, to reduce dependence on fossil fuels and has financial incentives to reduce energy demand. Government climate change targets are to produce 30% of electricity from renewable sources by 2020, to cut greenhouse gas emissions by 50% on 1990 levels by 2025 and by 80% on 1990 levels by 2050.

UK Solar PV Strategy Part 1: Roadmap to a Brighter Future (2013)

- 4.3.3 The Department of Energy and Climate Change (DECC) published the Part 1 of the UK Solar PV Strategy in October 2013. In the Foreword, the Minister states DECC's central forecast estimates that the UK is likely to reach 10GW of installed solar PV by 2020 and that current installations are around 2.5GW. He acknowledges that this 'big ambition must also be matched by a much greater sensitivity to impacts on landscape, visual amenity and biodiversity. Local communities must be willing partners in solar expansion; not just consulted but respected and where ever possible, financial partners in local projects'.
- 4.3.4 The Roadmap sets out four guiding principles, which form the basis of Government's strategy for solar PV:
- The first principle states that support for solar PV should allow cost-effective projects to proceed and to make a cost-effective contribution to UK carbon emission objectives in the context of overall energy goals.

- The second principle states that support for solar PV should deliver genuine carbon reductions that help meet the UK's target of 15 per cent renewable energy from final consumption by 2020.
- The third principle notes that support for solar PV should ensure proposals are appropriately sited, give proper weight to environmental considerations such as landscape and visual impact, heritage and local amenity, and provide opportunities for local communities to influence decisions that affect them.
- The fourth principle relates to support for solar PV and how it should assess and respond to the impacts of deployment on grid systems balancing; grid connectivity; and financial incentives.

4.3.5 Paragraph 57 of the Roadmap states that *"a key issue is to ensure that proposals to deploy solar PV take account of the circumstances of each project"*. It gives an example of a site that contains plots of highest-grade agricultural land also including areas of lower grade land and therefore being potentially legitimate for use as a solar PV development.

UK Solar PV Strategy Part 2: Delivering a Brighter Future (2014)

- 4.3.6 DECC published Part 2 of the UK Solar PV Strategy in April 2014. In the Foreword, the Minister states that there is 2.7 GW of PV capacity in the UK and that the UK has the potential to install up to 20 GW of solar early in the next decade. The strategy focuses on the Department's ambition for the key market segments, particularly opening up deployment on the roofs of commercial, industrial and larger public buildings, how this ambition will be realised through innovation and partnership and the benefits for jobs and investment in the UK, in addition to delivering emissions reductions.
- 4.3.7 Section 1.5 of the strategy focuses on large-scale ground-mounted deployment. It notes that over the last four years, the development of larger, usually ground-mounted, utility-scale solar PV has greatly increased both in terms of the installed capacity and the number of installations. Paragraph 64 states:

"While large-scale solar arrays provide opportunities for greater generation, they can have a negative impact on the rural environment if not well-planned and well screened. There can also be problems where local communities see no benefit but consider that they bear amenity issues. The Solar Trade Association has developed a statement of '10 Commitments' for solar array developers, which seeks to ensure that the impact of large-scale solar arrays on communities, visual impact and long term land use are minimized".

UK Solar PV Strategy Update Letter to Local Authorities (2014)

- 4.3.8 Gregory Barker, Minister of State at DECC, wrote a letter to LPAs on 22nd April 2014 reiterating that the Department strongly supports solar PV and seeks to provide an update to LPAs about the main points of its Solar Strategy. The letter emphasises that there is still a place for large scale field based solar in the UK's energy mix, and highlights the need for new solar installations to be sensitively placed, quoting one of the strategies four guiding principles:

"Support for solar PV should ensure proposals are appropriately sited, give proper weight to environmental considerations such as landscape and visual impact, heritage and local amenity, and provide opportunities for local communities to influence decisions that affect them."

4.3.9 The letter draws attention to the DCLG's planning guidance listing the following:

- *It is important that the planning concerns of local communities are properly heard in matters that directly affect them*
- *The need for renewable energy does not automatically override environmental protections*
- *Great care should be taken to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of planning proposals on views important to their setting*
- *Proposals in National Parks and Areas of Outstanding Natural Beauty, and in areas close to them where there could be an adverse impact on the protected area, will need careful consideration*
- *Protecting local amenity is an important consideration which should be given proper weight in planning decisions.*

4.4 Summary

4.4.1. There is a nationally binding commitment to reduce CO₂ emissions, and both national and local policy are supportive of renewable energy projects.

5.0 PLANNING APPRAISAL

5.1 Introduction

5.1.1 In this section, the principal of development is assessed together with the detailed matters which arise from this type of development are assessed against the development plan policies, drawing upon, where appropriate, the findings of the technical studies which accompany the application proposal.

5.1.2 The detailed matters covered within this section include:-

- Principle of development;
- Landscape and Visual Impact;
- Agricultural Land;
- Access and traffic;
- Acoustic considerations;
- Hydrology;
- Ecology;
- Sensitive Human Receptors;
- Archaeology
- Glint and Glare; and
- Restoration.

5.2 Principle of Development

5.2.1 Policy PS12 of the adopted Wrexham UDP is supportive of renewable energy schemes provided that the wider environmental benefits are not outweighed by any detrimental impacts of the proposed development.

5.2.2 As identified above, the southernmost part of the site lies within a Special Landscape Area, as identified on Wrexham's UDP Proposals Map. UDP Policy EC5 seeks to control development within Special Landscape Areas, other than development for agriculture, small-scale farm-based and other rural enterprises, and essential operational development by utility service providers. The proposed development falls within the category of small-scale farm based development and other rural enterprises, and as such complies with this policy.

5.2.3 Of significant importance to this proposal is the legally binding requirement of UK Government to meet its own targets for renewable energy generation. Wrexham County Borough Council must also play its role in meeting this (minimum) target and the proposal would make a valuable contribution to meeting the challenging target for the production of energy from renewable sources.

5.2.4 The renewable energy generating capacity put forward by this application therefore represents an important energy contribution at a local level and this, alongside the support for renewable energy schemes, is a significant material consideration in support of the proposed development.

5.3 Landscape and Visual Impact

- 5.3.1 The application is supported by a Landscape and Visual Impact assessment prepared by Tirlun Barr Associates. The Study Area covered 1km from the site boundary, which was felt to be appropriate given the size of the proposed development and the nature of the site and existing landscape. This allowed potential landscape and visual impacts to be determined and likely effects to be evaluated. It made provision for a range of viewpoint locations (e.g. road, residential and recreation), and examined existing landscape character and landscape designations over a suitably wide area. A summary of the assessment is set out below.

Landscape Character

- 5.3.2 The proposed development will introduce a new feature into the landscape which will have some effect on landscape character locally. However as the surrounding landscape is well wooded, it has the ability to visually absorb the proposed development without affecting the wider landscape. In addition, the presence of developed land use nearby, in particular the Industrial Estate to the north and Gas Plant to the west, means that the landscape impact will be limited in extent and there will be no change in overall character.
- 5.3.3 With the exception of the temporary removal of a small section (approximately 5m) of hedgerow on the sites western boundary to allow vehicles access and egress during the construction phase (which will be reinstated when construction is complete), the proposed development will not affect any existing trees or hedgerows. The retention of trees and hedgerows, which are key elements of landscape character, mitigates the potential landscape character effects.
- 5.3.4 In addition the LVIA recommends that a short length of hedgerow further north on the western boundary is repaired using additional native planting in the form of Blackthorn hedging, replicating an indigenous landscape feature.
- 5.3.5 The landscape impact of the proposed development is considered to be slightly adverse or neutral at Day 1 and also at Year 15. Normal landscape impact will remain as neutral, and only during temporary periods when deciduous vegetation is leafless, will the landscape impact be slightly adverse.

Landscape Designations

- 5.3.6 The southernmost 150m of the site is identified as being within a Special Landscape Area as defined on Wrexham's UDP proposals map. This designation is focussed around the River Clywedog and extends east to incorporate Peters Dingle and land just north of this. Land between the proposed site and the Industrial Estate is excluded from this designation.
- 5.3.7 There are no other landscape designations covering the site or within the study area that are recognised at the national, regional and local level.

Visual Impact Assessment

- 5.3.8 Views towards the proposed development are very well contained due to the presence of established vegetation and the relative distance of and limited number of receptors. As such,

the proposed solar array will not appear as a readily noticeable visual detractor and will be largely non-evident to the majority of receptors.

- 5.3.9 Large scale industrial units north of the site prevent longer elevated views southwards over the landscape.
- 5.3.10 All other views from the north, south and east are restricted by existing topography and the presence of well-established existing vegetation including along the River Clywedog, Peter's Dingle and Mill Wood.
- 5.3.11 There will be no views of the proposed development from populated areas such as Pentre Maelor, Bowling Bank or Shocklach or from nearest properties of Parkey Lodge and Nant Cottage.
- 5.3.12 Views from the west are predominantly from the existing Public Footpath (ABE/19), and this is only for a short length (approximately 160m) of the footpath when travelling north and south. Due to the distance and the presence of existing hedgerows however the proposed development will appear of limited visual significance, and the short length of hedgerow improvement proposed on the sites western boundary will help to absorb the development for receptors using the Public Footpath.
- 5.3.13 The LVIA identifies that there may some distant partial views from several properties approximately 1km from the site, including from three properties along Sun Lane, the upper windows of Top House Farm, and the gardens of Oakwood and Denwerra. In addition, there may be a limited view of the proposed development from Oak Road for a length of approximately 170m when travelling north-west, whereby the site would be a very small component of the wider view.
- 5.3.14 For these receptors the visual impact constitutes a slight impact on Day 1 reducing to no discernible impact at year 15 as further vegetation growth continues. Any identified views from these receptors will be viewed in the context of the large scale buildings within the industrial estate (and will in the future also include the proposed prison which has now commenced), all of which create a degree of light refraction at times.
- 5.3.15 Overall, therefore, the visual impact will be slightly adverse on Day 1 reducing to neutral at Year 15 as vegetation continues to grow.

Cumulative Effects

- 5.3.16 No existing or proposed solar arrays or arrays have been identified within the study area and considering this, and the level of screening the site has due to topography, existing vegetation and existing development, no cumulative effects have been identified.

Summary

- 5.3.17 The proposed development will not materially detrimentally affect countryside, landscape/townscape character, or the quality of the natural environment, and therefore is in accordance with UDP Policy PS2.
- 5.3.18 The proposed development has been designed to respect existing landscape features where possible and to minimise its visual impact, and as such accords with UDP Policy EC5.

5.4 Agricultural Land

- 5.4.1 The Agricultural Land Classification (ALC) system divides agricultural land into five grades according to the inherent qualities and versatility of soils interacting with other factors such as slope and climate. Grade 1 of the ALC is described as being of excellent quality and Grade 5, at the other end of the scale, is described as being of very poor quality.
- 5.4.2 The site is identified on the Agricultural Land Classification (England and Wales) 1985 map as either Grade 3 or 4 land.
- 5.4.3 An Agricultural Land Classification survey was undertaken by Soil Environment Services Ltd which includes an initial desktop classification together with an intrusive field survey consisting of a number of hand auger borings to a depth of 1.2m to examine soil profiles. The survey concluded that the site comprises mainly of Grade 3b agricultural land, with a small amount of borderline Grade 3a/3b agricultural land in the north of the site.
- 5.4.4 Agricultural land which has been graded as 3b, 4 or 5 is classed as ‘poorer’ quality agricultural land. Solar PV development on land within these three classifications is preferred by national planning policy, and the UK Solar PV Strategy letter dated April 2014.
- 5.4.5 Whilst a small amount of the application site is borderline Grade 3a/3b agricultural land, Policy EC2 of Wrexham’s UDP permits development on Grade 3a agricultural land where it does not lead to the irreversible loss of that land. The solar panels will not take up the whole of the site, and a significant proportion of the site will be retained as grassland and will be grazed by sheep. The development is expected to generate renewable energy for 25 years, and after this time the site will be returned to full agricultural use. Thus, the proposed development will not result in the permanent loss of potential agricultural land and satisfies the requirements of UDP Policy EC2.
- 5.4.6 It is therefore considered that the application accords with the development plan and associated guidance from the government.

5.5 Access and Traffic

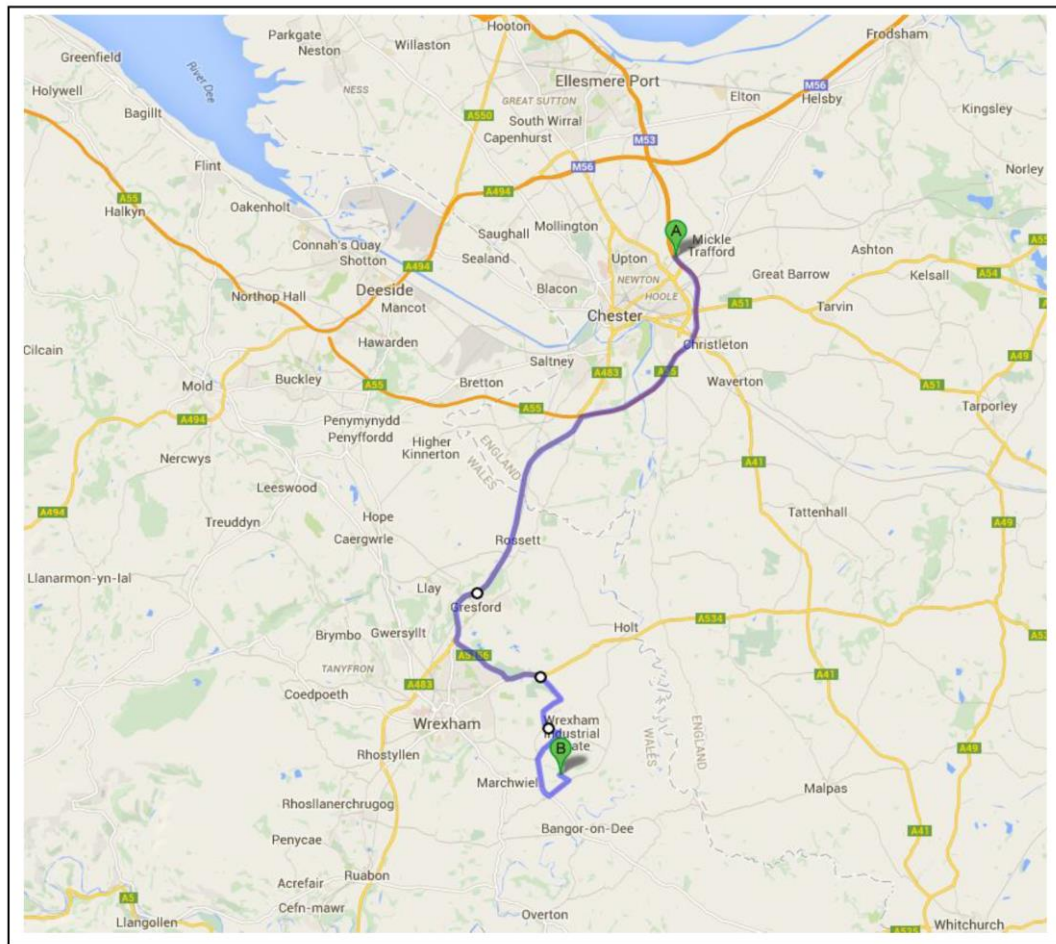
- 5.5.1 Access to the proposed solar array will be via an adopted unclassified access track which runs due north from the B5130 at Talwrn through Parkey Lodge Farm. Beyond Parkey Lodge Farm an un-adopted track (Footpath ABE/19) provides access to the application site.
- 5.5.2 A temporary access track, in either crushed stone or matting, will be laid on the grassed track through the field to the west of the site in order to provide ground protection and to enable it to support the loading of HGVs and plant. The temporary access track will be removed on completion of the construction phase.
- 5.5.3 The existing access into the development site between the two semi-mature oak trees is not wide enough to accommodate vehicles during the construction and installation phase. As such, a small section (approximately 5m) of hedgerow will need to be removed to allow vehicles access and egress to the site. This would comprise permitted work under section 6(3) of the Hedgerows Regulations 1997.

5.5.4 Post construction traffic will generally consist of non-HGV maintenance and repair vehicles generally visiting the site on an infrequent basis.

5.5.5 It is proposed that the route to the site would comprise of the following steps and shown on Figure 2 below;

- From the M53 continue onto the A55
- At Junction 38, take the A483 exit to Wrexham/Chester
- At the roundabout, take the 1st exit onto the A483
- Take the ramp to Nantwich/A534
- At the roundabout, take the 2nd exit onto the A5156
- At the roundabout, take the 2nd exit and stay on the A5156
- At the roundabout, take the 1st exit onto A534
- At the roundabout, take the 3rd exit onto Industrial Estate Road
- At the roundabout, take the 3rd exit onto Abenbury Way
- Continue onto Coed Aben Road
- Turn right onto Bridge Road
- At the roundabout, take the 2nd exit and stay on Bridge Road
- At the roundabout, take the 2nd exit and stay on Bridge Road
- At the roundabout, take the 2nd exit
- At the roundabout, take the 1st exit onto Upper Bidwell Bridge/A525
- Turn left onto the B5130
- Turn left onto the access track towards Parkey Lodge Farm.

Figure 2 – Proposed Delivery Route



5.5.6 The whole construction timeframe for the solar array is programmed to be a maximum of 12 weeks. This includes a 2 week enabling phase. The project can be subdivided into three primary phases;

- Enabling works - including entrance upgrade, temporary access road and construction compound – circa 2 weeks
- Construction phase – circa 12 weeks; and
- Operational phase.

5.5.7 It is proposed that all construction works will take place between 08.00am and 18.00pm - Monday to Friday and 08:00am and 13:00pm - Saturday. No construction works will be undertaken outside these hours or on Sundays, Bank or Public Holidays.

5.5.8 The majority of personnel and other light goods vehicles (LGVs) will arrive on site during the AM peak period and will depart during the PM peak period. HGVs will be distributed throughout the day.

5.5.9 Solar array construction traffic will principally comprise:

- Site workers vehicles (LGVs/cars);
- HGVs transporting materials and equipment associated with the construction of the Solar array temporary construction access road, temporary compound area, solar panels, mounting frames, inverters and security fencing;
- A crane for delivering and positioning the inverter stations;
- Excavator for the cable trenching; and
- A piling machine for the installation of the module supporting frames.

- 5.5.10 It is estimated that the maximum number of construction staff on site will peak at around 45 workers, though this will vary subject to the overall programme of works. It is also considered likely that there will be a degree of vehicle-sharing by staff hence daily vehicle generation is likely to be less than 15 vehicles. Therefore, there will be an average of 30 light vehicle movements per day (15 vehicle movements in and 15 out). Once the Solar array is operational no staff will be based at the site.
- 5.5.11 Vehicle parking for site workers during all stages of construction will be accommodated on site at the temporary hard-standing compound area adjacent to the site access.
- 5.5.12 Material deliveries will include solar panels, associated mounting frames and technical equipment for the generation of electricity, gravel and other construction materials, construction plant and other equipment.
- 5.5.13 HGV deliveries will be coordinated via a delivery rota system to avoid large numbers of vehicles arriving and exiting the site at the same time.
- 5.5.14 In the northern most part of the access route, liaison would take place directly with the occupiers of Parkey Lodge to ensure that there is no conflict with their movements.
- 5.5.15 Whilst the proposed development will impact on a small section of Public Footpath ABE/19 during the construction phase, the Public Footpath would remain open, and thus access rights which are presently enjoyed in the general area will be maintained. The use of banks men will ensure the safety of members of the public using the footpath when deliveries are taking place. Discussions with the Council prior to submission of the application confirm that given the short stretch of PRoW concerned and the short term nature of the construction works, it is unlikely that the proposed development will adversely impact upon the PRoW.

5.6 Acoustic Considerations

- 5.6.1 Noise impacts will be limited to the construction phase of the development, whereby there would be minor impacts generated by the vehicle movements across the site coupled with the installation of equipment.
- 5.6.2 Once operational, the sub stations which accompany the scheme would generate additional background noise levels; however any noise is mitigated in its housing through effective insulation. The arrays will be fixed and as such will not generate any noise. The application site is a significant distance (220m) from the nearest sensitive receptor, and any noise generated above background levels would be imperceptible at this distance.

5.7 Hydrology

- 5.7.1 The site of the proposed solar array is not within a flood zone and apart from the small inverter kiosks, and temporary sites work area, the development will not introduce any additional areas of hard surfacing. The proposed development is unlikely, therefore, to increase the risk of flooding elsewhere.

5.8 Ecology

- 5.8.1 The application is supported by an ecological assessment undertaken by Etive Ecology Ltd on behalf of Caulmert Ltd.

Ecological Assessment

- 5.8.2 The assessment comprised an Extended Phase 1 Habitat survey, a desk study, a summary of likely impacts on the ecological value of the site and recommendations for the mitigation of these impacts and for enhancing the ecological value of the site.
- 5.8.3 The two non-statutory nature conservation sites located within the 1km study area are Local Wildlife Sites (LWS), one of which lies 100m to the northeast of the site (Wrexham Industrial Estate LWS), and the other lies 400m to the south (Peter's Dingle LWS). Protected species within the study area include Great Crested Newts (GCN), badgers, otters, and a number of different species of reptile, bats and birds.
- 5.8.4 The site comprises a single field of improved grassland, with a small area in the northern part of the site which has recently been converted from grassland to provide crop, thought to be corn. The field boundaries around the site are predominately species-poor hedgerows, with a number of scattered mature and semi-mature broadleaved trees found within the hedgerows or just outside.
- 5.8.5 There is one pond within the site boundary, and a further seven ponds located within 550m of the site, all of which have been assessed for their potential to support GCN. Three of these ponds, including one within the field to the south of the site, are considered to offer good quality habitat for breeding GCN. The pond on site is considered to provide an average quality habitat to support GCN.
- 5.8.6 Although no specific protected species surveys have been undertaken, the site has the potential to support GCN, roosting and foraging bats and a limited number of breeding birds. All of these species are likely to be found within or near to the hedgerow network or in the pond within the site, as the grassland field and arable land in the north of site are considered to be of low ecological value/potential.
- 5.8.7 The Ecological Assessment recommends that the following measures are undertaken in order to mitigate the impacts of the proposed development and to enhance the ecological value of the site.
- A full suite of GCN surveys are carried out to confirm the currently presumed presence of GCN and to estimate a population size;
 - The buffer zones surrounding the pond and hedgerows are demarcated and observed during installation;
 - Enhancement measures are put in place to improve the field margins and pond;

- A Conservation Hedgerow Management Regime is implemented post-construction; and
- Nine bat boxes are installed on hedgerow trees.

Summary

5.8.8 The Ecological Assessment demonstrates that provided the above recommendations are followed, the proposed development will have no residual impacts on the ecological value of the site, and that it is supportive of the requirements of UDP Policy EC4.

5.9 Sensitive Human Receptors

5.9.1 The proposed solar array is located within the open countryside away from any residential dwellings. Section 6 of the LVIA undertaken by Tirlun Barr Associates assesses the impact of the proposed development upon viewpoints surrounding the site. These viewpoints take into consideration surrounding residential properties including Parkey Lodge (located 220m from the development site) and Nant Cottage (located 600m from the development site), together with PRow's in the surrounding area.

5.9.2 The LVIA concludes that the proposed development would not have any significant impacts on users of Footpath ABL/19 or surrounding residents.

5.10 Archaeology and Cultural Heritage

5.10.1 The application proposal is supported by a Heritage Desk Based Assessment prepared by Cotswold Archaeology.

Heritage Desk Based Assessment

5.10.2 There are four listed buildings within the southern part of the 1.5km study area, however these were deemed to require no further assessment due to their distance from the site, lack of historic landscape connectivity with the site, and lack of inter-visibility with the site.

5.10.3 The site is located in the vicinity of the former ROF Marchwiel Ordnance Factory, and review of historic mapping and aerial photography indicates that a series of embanked enclosures and associated defensive pillboxes existing within the site. The only one of these to remain is the pillbox outside of the north-western corner of the site. This will remain in situ and will not be affected as part of the proposed development. The buried physical remains (if any) of the other pillboxes are unlikely to contribute to the understanding of the ordnance factory, and are therefore considered to be of little significance.

5.10.4 The submitted Heritage Desk Based Assessment identified no significant recorded buried archaeological remains and only a limited potential for unrecognised buried archaeological remains being present within the site. Any archaeological remains that are present within the site are unlikely to be affected to any significant degree by construction of the solar array.

5.10.5 The hedgerows that form the site boundary might be considered historically important under the Hedgerow Regulations 1997. The existing access to the site between two semi-mature oak trees is not wide enough to allow vehicles access and egress to the site during the construction phase. As such there is a need to remove a small section of hedgerow (approximately 5m) on

the sites western boundary. All other hedgerows bordering the site will be retained as part of the proposal. Given the hedgerow will be reinstated following the construction period, the historic field pattern will be preserved, and there will be no harm caused to the local historic landscape.

Summary

5.10.6 The proposed development will not adversely affect any designated or non-designated heritage assets within the study area, and there are no heritage constraints that would preclude development of the site for solar PV.

5.10.7 The proposed development complies with national policy and legislation relating to the protection of the historic environment, and accords with UDP Policies EC9 and EC11.

5.11 Glint and Glare

5.11.1 The photovoltaic panels are made up of silicon based photovoltaic cells that are encased in a glass covering. Glass does not have a true specular reflection, but does reflect a certain magnitude of light.

5.11.2 Reflection of sunlight from photovoltaic panels is unwanted by the operator. This is because the greater the amount of light which can be captured at the photovoltaic cell, a greater the amount of electricity can be produced. Panel manufacturers therefore use anti-reflective coating in the glass that changes the reflectivity from specular distribution to diffuse distribution and is sometimes referred to as 'stipple glass'.

5.11.3 Consequently as light falls onto the photovoltaic panels, most of the sunlight is transmitted to the photovoltaic cell beneath the glass with only a small amount reflected back in multiple of angles and magnitudes. The result is an object that is perceived to have very little glare. The Federal Aviation Administration (FAA) Technical Guidance for Evaluation Selected Solar Technologies at Airports, November 2012 indicate the reflective light can be a little as 2% of the incident sunlight:-

"Once the amount of sunlight is known, reflectivity from solar projects will vary based on the type of solar power system and its materials and design. Solar PV employs glass panels that are designed to maximise absorption and minimise reflection to increase electricity production efficiency. To limit reflection, solar PV panels are constructed with dark, light-absorption materials and covered with anti-reflective coating. Today's panels reflect as little as 2% of the incoming sunlight depending on the angle of the sun and assuming use of antireflective coating."

5.11.4 The FAA study advises while solar collection technology has highly reflective surfaces, PV technology is primarily absorptive since the purpose of a PV panel is to absorb as much of the sun's energy as possible. The study notes the degree of reflectivity of a PV panel will depend upon:-

- The intensity of the incoming light;
- The reflectivity of the panel surface; and
- Whether the reflected light is 'specular' (as occurs from mirrors and still water) or diffuse (as occurs from rough surfaces such as terrain and vegetation).

- 5.11.5 It should be noted that since solar panels will only be reflecting some 2% of the light, the intensity of the glare will be less than that from other surfaces, including grass and therefore it is considered that due to the location glint and glare from the proposed development would be negligible.

5.12 Restoration

- 5.12.1 The application proposal is a temporary structure with an operational lifespan of approximately 25 years. Following the cessation of energy generation at the site the proposal will be decommissioned and all plant and machinery will be removed from site.

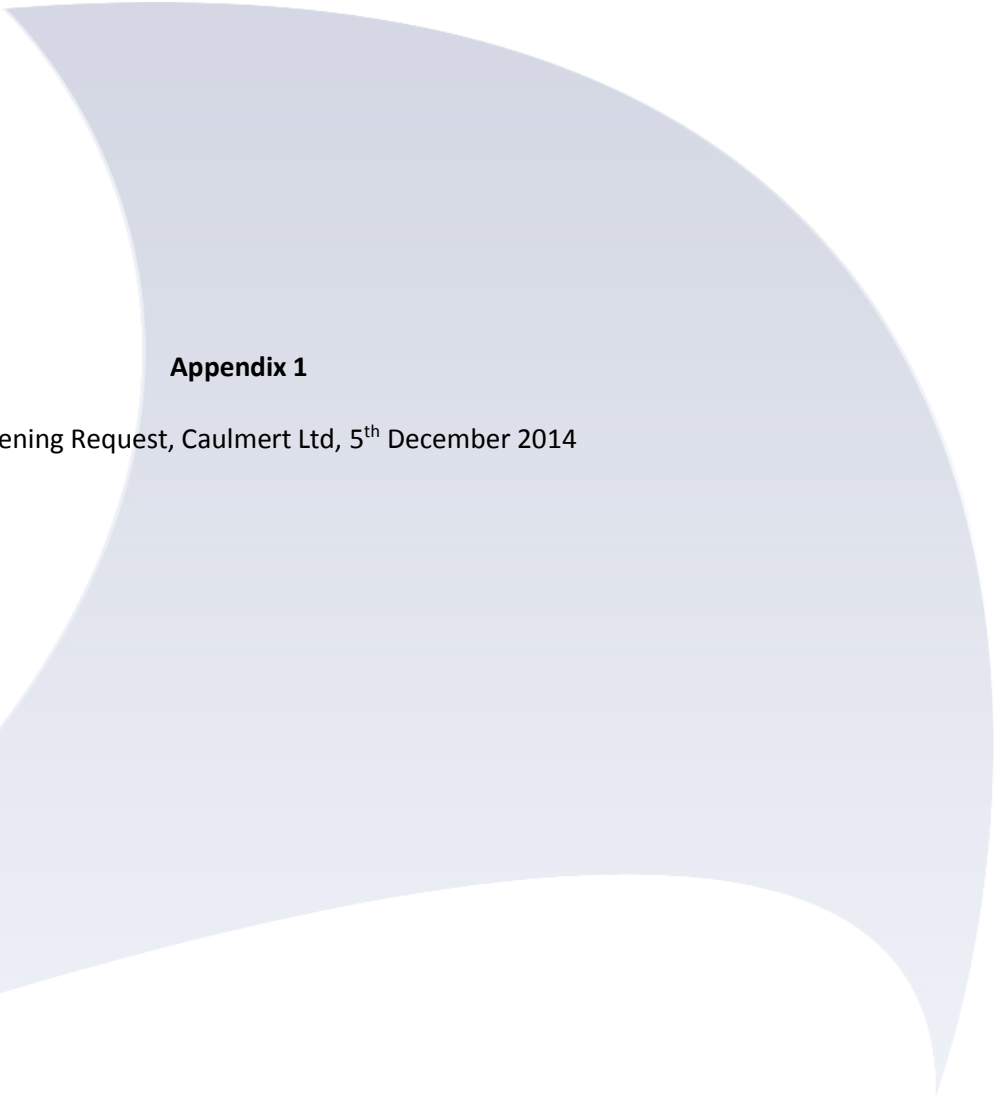
6.0 THE PLANNING BALANCE

- 6.1.1 The principle of the proposed development is fully supported by the provisions of both Planning Policy Wales and TAN8, which seek to promote renewable energy as part of the Welsh Government's overarching objectives regarding sustainability and climate change, and by Policy PS12 of Wrexham's UDP.
- 6.1.2 At the local level, the site of the proposed solar array is located in open countryside, outside of the existing settlement boundaries as defined on the UDP proposals map. Whilst UDP policies do not preclude the development of solar arrays outside of the settlement boundaries, the environmental and amenity implications of such developments are an important consideration.
- 6.1.3 A small proportion of the southern part of the application site falls within a Special Landscape Area and as such UDP Policy EC5 applies. The proposed development falls within the category of small-scale farm based development and other rural enterprises, which Policy EC5 allows for within Special Landscape Areas. As such the proposed development complies with UDP Policy EC5.
- 6.1.4 The LVIA submitted as part of this planning application demonstrates that the overall impact of the proposed solar array on both landscape character and visual amenity will be low, initially, and that this impact will diminish further as planting associated with the proposed development becomes established. Thus, the proposed development accords with the requirements of UDP Policy PS2.
- 6.1.5 Whilst the proposed development will result in the loss of a small amount of borderline grade 3a/3b agricultural land, UDP policy EC2 allows for development on agricultural land of grades 1, 2 or 3a provided it does not lead to the irreversible loss of that land. A significant proportion of the site will be retained as grassland and will be grazed by sheep, and when the solar array is no longer required the site will be returned to full agricultural use. Thus, the proposed development will not result in the permanent loss of potential agricultural land and satisfies the requirements of UDP Policy EC2.
- 6.1.6 The proposed development has been designed to protect existing landscape features where possible, and the layout of the proposed solar array provides a generous clearance around existing trees and their root protection zones. Whilst the proposed development will result in the temporary removal of a small section of hedgerow on the sites western boundary adjacent to the existing access to allow vehicles access and egress to the site during the construction phase, this will be reinstated in the form of Blackthorn hedging within 8 months of the making of this new opening, as is required by Regulation 6(1)(a) and 6(2) of the Hedgerow Regulations 1997. As such, the proposed development will not have any long term impact on the local landscape. The LVIA recommends that a short length of hedgerow further north on the sites western boundary is repaired using additional native planting. As such it is considered that the proposed development accords with UDP Policy EC4.
- 6.1.7 The Ecological Appraisal submitted as part of this planning application demonstrates that provided the recommendations identified are followed, the proposed development will have no residual impacts on the ecological value of the site, and that it is supportive of the requirements of UDP Policy EC4

- 6.1.8 In operation, the proposed solar array will not generate any noise and traffic movements will be infrequent, involving occasional visits by maintenance staff.
- 6.1.9 The site of the proposed solar array is not within a flood zone and, apart from the small inverter kiosks, the development will not introduce any additional areas of hard surfacing. The proposed development is unlikely, therefore, to increase the risk of flooding elsewhere.
- 6.1.10 The Desk-Based Heritage Assessment submitted as part of this planning application demonstrates that the proposed development will not adversely affect any designated or non-designated heritage assets within the study area, and there are no heritage constraints that would preclude development of the site for solar PV. The proposed development complies with national policy and legislation relating to the protection of the historic environment, and accords with UDP Policies EC9 and EC11.
- 6.1.11 The benefits of providing renewable energy sufficient to power the equivalent of 820 households and saving approximately 1,500 tonnes of CO₂ emissions per annum should carry weight, particularly given the legally binding renewable energy target in the UK and the support for renewable energy in local and national policy.
- 6.1.12 Other benefits of the proposed development include job opportunities, especially for local supply chain during the construction of the solar array.
- 6.1.13 Accordingly, the proposal will create substantial benefits that should be given great weight as material considerations in their own right, and which far outweigh any harm (or temporary harm) that can be attributed to the proposal.
- 6.1.14 In this case therefore, the planning balance falls firmly in favour of approving the proposed development.

7.0 CONCLUSIONS

- 7.1.1 The selected site is appropriate in that it can accommodate the proposed solar array without significantly affecting the landscape character of the surrounding area or the amenities of any residents. The temporary and reversible nature of the development, together with the measures that are to be taken to enhance and encourage the ecological diversity of the site, will ensure that in the long term the site can be restored to its current use.
- 7.1.2 The wider environmental benefits and sustainability credentials associated with the increased production of energy from renewable sources represents a significant case in favour of the development proposals.
- 7.1.3 The development is fully in accordance with the provisions of Planning Policy Wales, relevant Technical Advice Notes and the statutory Development Plan for the area.
- 7.1.4 The proposed development will not result in any material harm to interests of acknowledged importance and all potential adverse impacts will be fully mitigated.
- 7.1.5 The Local Planning Authority is requested, therefore, to grant planning permission for the proposed use of land at Pickhill Bridge Farm, Wrexham for the erection of a solar photovoltaic array, including metering and inverter kiosks, security cameras, fencing and gates, and a temporary construction compound and access track.



Appendix 1

EIA Screening Request, Caulmert Ltd, 5th December 2014

Head of Community Well-being and Development,
Wrexham County Borough Council,
Lord Street,
Wrexham,
LL11 1LG,

By email – planning@wrexham.gov.uk

Our ref: 2204.01.EWPLC.NF.HJ.A0

Date: 5th December 2014

Dear Sir/Madam,

**Land at Pickhill Bridge Farm, Cross Lanes, Wrexham – Proposed Solar PV Ground Mounted Array
Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations
1999 (as amended) - Request for Screening Opinion**

Caulmert Ltd, on behalf of Earthworm Energy Plc, seek a formal Screening Opinion from Wrexham County Council under Regulation 5 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (as amended) to determine whether or not the development herein detailed is a development that is listed by the aforementioned Regulations, and therefore whether an Environmental Impact Assessment is required.

As required by Regulation 5 of the EIA Regulations, I am providing below and attached to this letter, the following information:

- a) a plan sufficient to identify the land;
- b) a brief description of the nature and purpose of the development and of its possible effects on the environment; and
- c) any other information or representations as the person making the request may wish to provide or make.

Description of Development

The proposal is to install a ground mounted solar PV array with a capacity of between 3 and 4MW on land north west of Pickhill Bridge, Cross Lanes and shown on the attached site boundary map.



Certificate Number 9113
ISO 9001, ISO 14001

Caulmert Limited

Registered Office: InTec, Parc Menai, Bangor, Gwynedd, LL57 4FG

Company Registered No. 06716319

Company Registered in Cardiff



The detail of any scheme layout may alter for any final planning submission, but it would be within the area identified on the attached plan and include:

- Installation of PV panels, approximately 1 metre off the ground; with a maximum height of approximately 2 metre from ground level; the panels would sit approximately 35 degrees towards south
- Construction of ancillary works to include improved site entrance junction, access tracks, CCTV cameras and fencing;
- Temporary construction compound;
- Inverter/substation - the inverter will typically be housed in a weather proof fibre glass proprietary enclosure. The substation will be to standard specification of the DNO in order to meet their requirements and it is proposed that building materials can be agreed with the LPA during the planning process or via condition.

The exact type of PV panel to be used on the proposed site has not yet been determined as detailed technical site investigations are currently being completed. The findings of these investigations will determine the final layout and panel choice, but as stated above all panels will be located within the area identified.

The PV panels will be laid out in arrays of long rows running east-west across the site. Each array will be mounted on a simple metal framework. Length of the panel arrangements will be dictated by site survey and optimised site layout arrangements.

The lifespan of the project is between 20 and 25 years after which the panels would be removed from the site.

EIA Regulations Assessment

Schedule 1 of the Environmental Impact Assessment (England and Wales) Regulations 1999 (as amended) identifies developments that require EIA and Schedule 2 identifies development types where, if the relevant criteria are exceeded a formal assessment must be undertaken against Schedule 3 in order to determine if an EIA is required.

The installation of solar PV panels does not fall under Schedule 1, and installation of PV is also not listed as a Schedule 2 development in the Regulations or Circular 2/99: Environmental Impact Assessment. However, because the development does not fall under either Schedule 1 or 2, we have reviewed the project in line with the requirements of Schedule 3 below.

Characteristics of the Development

Schedule 3 states that the characteristics of the development must be considered having regard, in particular, to:

- a) The size of the development;
- b) The cumulating impact with other development;
- c) The use of natural resources;
- d) The production of waste;
- e) The risk of accidents, having regard in particular to substances or technologies used.

It is not considered that this proposal would have a significant effect on the environment with reference to these criteria, for the following reasons:

- The size of the development will be ~7ha.
- The development will comprise rows of panels which, it is expected, will not exceed 2 metre in height approximately with the number of rows dependant on final site design;
- Each row will be positioned to face due south and be angled at between 25 and 35 degrees;
- It is considered that the visual and landscape impact will be minimal within the wider landscape;
- The project will generate an important source of renewable energy from natural resources in a sustainable manner;
- No waste would be produced by on site processes; and
- Risk of accidents is considered to be not significant due to the nature of the technology proposed.

Location of Development

Schedule 3 states that the environmental sensitivity of geographical areas likely to be affected by development must be considered, having regard, in particular, to:

- a) The existing land use;
- b) The relative abundance, quality and regenerative capacity of natural resources in the area;
- c) The absorption capacity of the natural environment with particular reference to certain defined areas.
- d) The agricultural land classification.

The site on which the PV panels will be located forms an agricultural land holding currently used for variety of agricultural uses including silage and grazing. It is the intention to retain the agricultural use for the land during the operation of the solar farm and for the land to be returned to its current state at the end of the operational period, currently expected to be between 20 and 25 years.

According to the Agricultural Land Classification (England and Wales) 1985 map available online, the site is classed as either Grade 3 or 4 land. However it is proposed at that a site based survey including taking soil samples is undertaken to confirm the exact grade prior to the submission of any planning application for the proposed development.

Characteristics of the Potential Impact

Schedule 3 states the potential significant effects of development must be considered in relation to the criteria set out above, and having regard in particular to:

- (a) The extent of the impact (geographical area and size of the affected population);
- (b) The trans-frontier nature of the impact;
- (c) The magnitude and complexity of the impact;
- (d) The probability of the impact;
- (e) The duration, frequency and reversibility of the impact;

Due to the panel height not exceeding the approximate height of 2 metres, the visual impact of this proposal on the wider landscape will be limited whilst utilising what is currently poor agricultural land.

There are no mechanical parts associated with the panels so there will be no noise generated by their presence on the site and thus there will be no noise impact, other than that which will occur through the construction phase. Noise during construction can be well regulated using planning conditions.

In terms of the other criteria, the magnitude and complexity of the impact is expected to be limited and confined to the local area, and is predictable.

The duration and frequency of the potential impacts are not significant and, with the removal of the panels after a temporary period of between 20 and 25 years, are largely reversible.

It is considered that the proposal is not a defined Schedule 2 development and further consideration against the criteria in Schedule 3 has determined that a significant environmental impact is not likely to arise and an Environmental Impact Assessment is not likely to be necessary in this case.

Conclusion

Consideration of the proposed development against the Environmental Impact Assessment (England and Wales) Regulations 1999 has determined that the proposal is unlikely to result in significant effects on the environment and consequently an Environment Impact Assessment is not required.

Taking the above into account, it is therefore intended to submit the following supporting information with the planning application in any case:

- Planning Statement;
- Design and Access Statement;
- Landscape and Visual Impact Assessment;
- Agricultural Land Classification Survey;
- Phase 1 Habitat and Ecology Assessment; and
- Cultural Heritage Assessment

This is considered to provide the necessary environmental information and assessment such that the acceptability of the proposals can be determined.

I look forward to receiving the Council's Screening Opinion. Should you require any further information or to discuss this further, please do not hesitate to contact me.

Yours faithfully,



Neil Foxall BA (Hons) MCD MRTPI

Principal Planner

On behalf of Caulmert Ltd

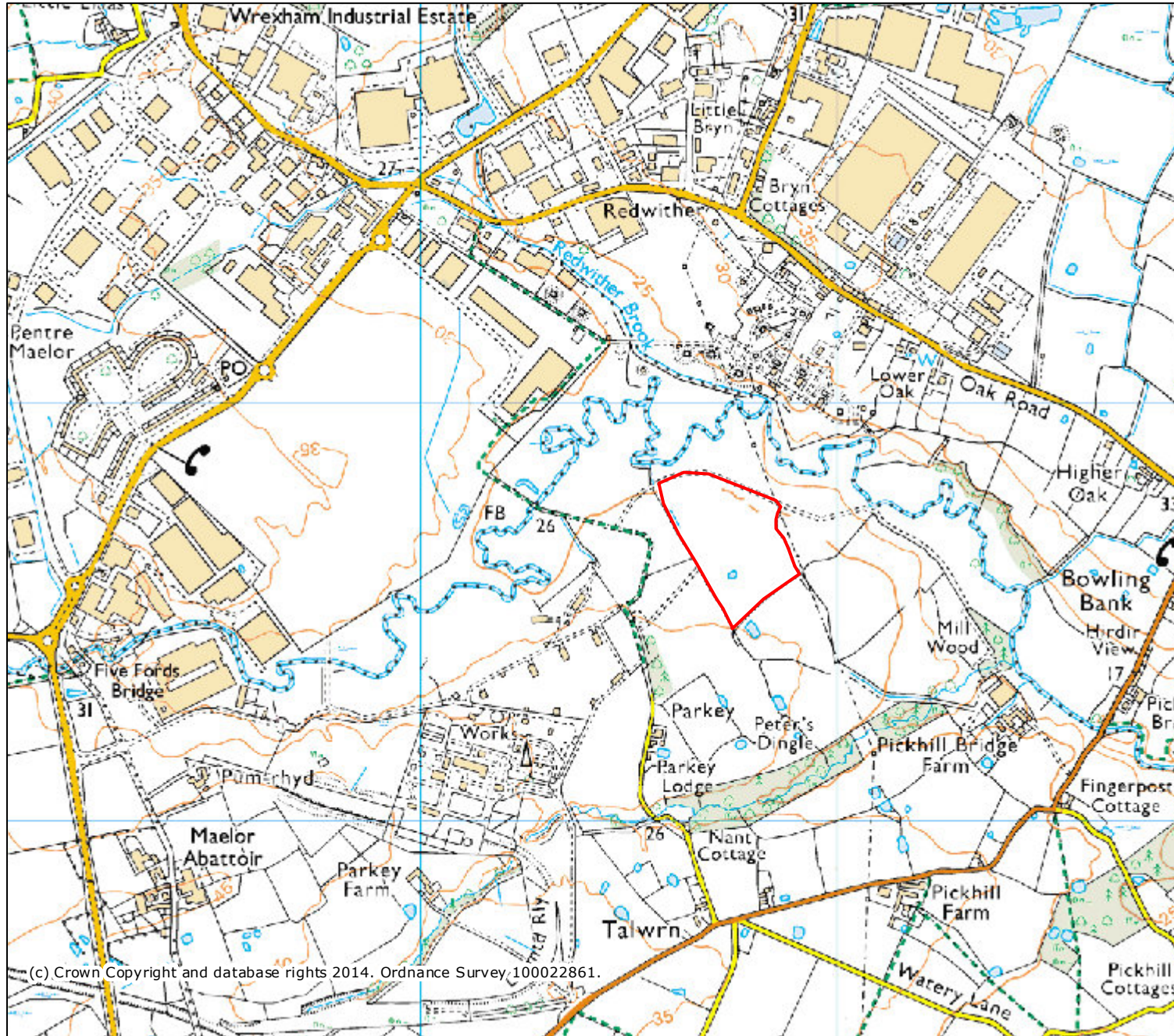
T: 0161 928 6886

M: 07557665879

neilfoxall@caulmert.com

Enc. Site Location Plan
 Site Boundary Plan

Pickhill Farm - Site Location



(c) Crown Copyright and database rights 2014. Ordnance Survey 100022861.

Projection = OSGB36

xmin = 335500

ymin = 347400

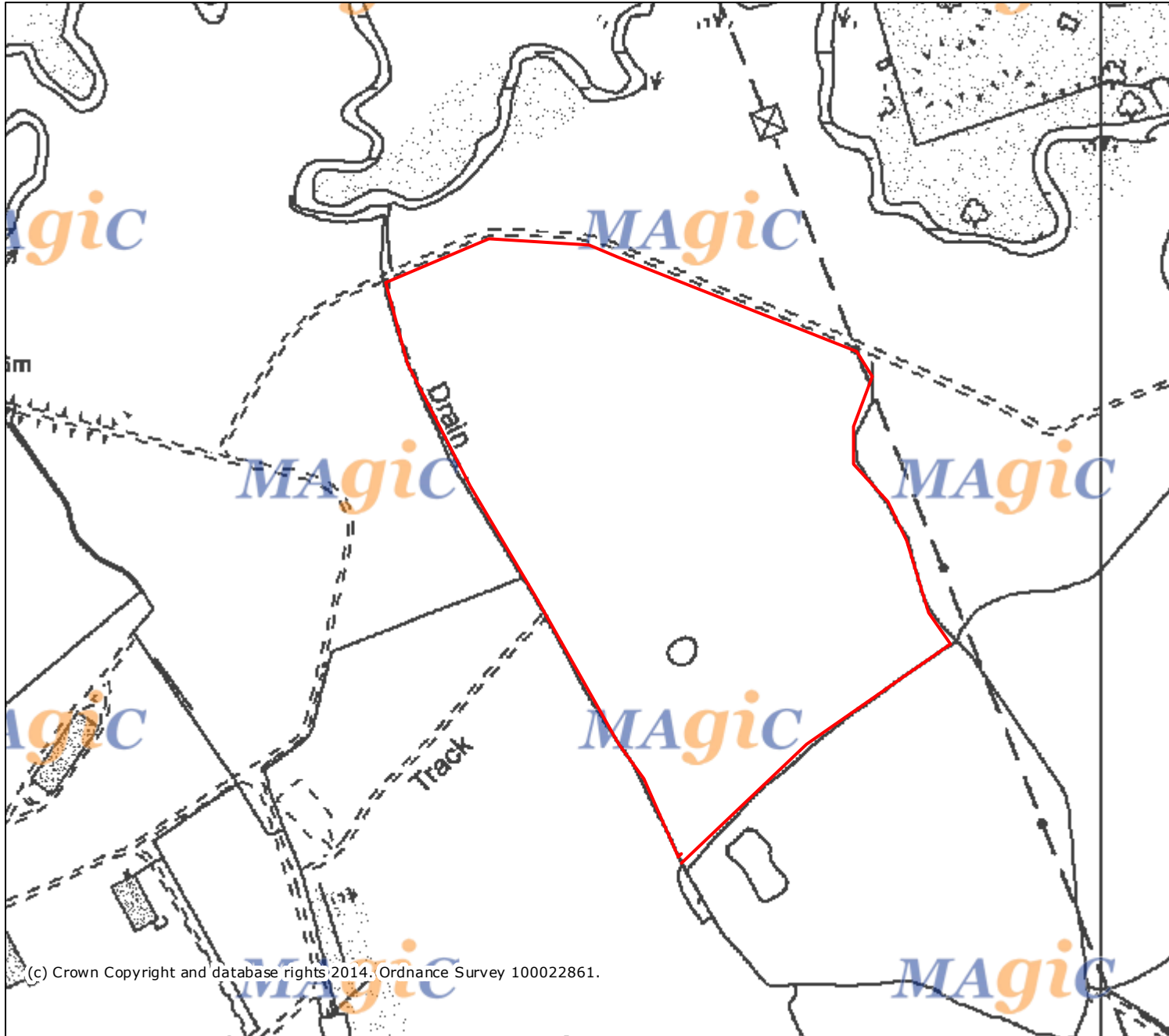
xmax = 341400

ymax = 350100

Map produced by MAGIC on 5 December, 2014.

Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

Pickhill Farm - Site Location



(c) Crown Copyright and database rights 2014. Ordnance Survey 100022861.

Projection = OSGB36

xmin = 338000

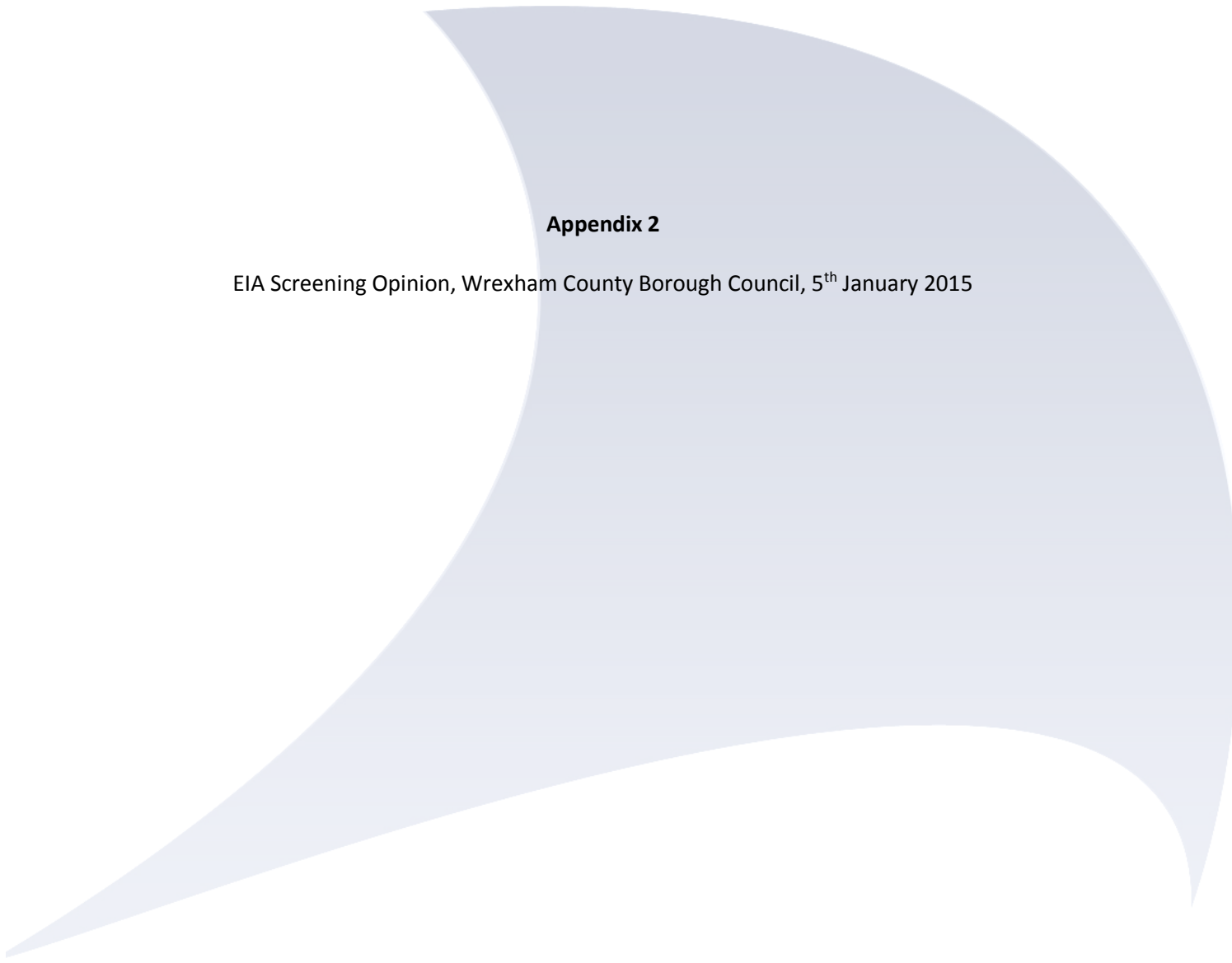
ymin = 348300

xmax = 339400

ymax = 349000

Map produced by MAGiC on 5 December, 2014.

Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGiC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.



Appendix 2

EIA Screening Opinion, Wrexham County Borough Council, 5th January 2015

✓ added
SIW 06/01/15

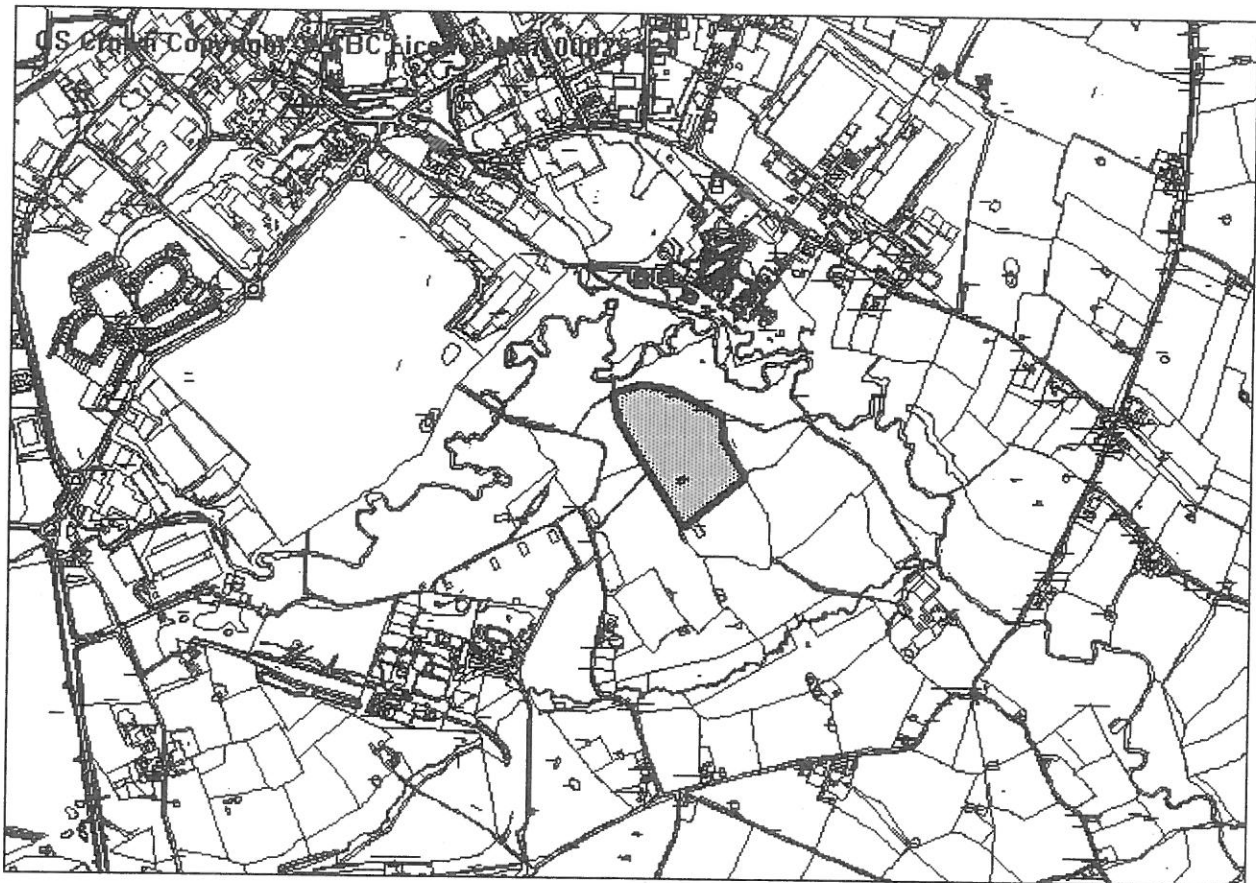
**Town and Country Planning (Environmental Impact Assessment)
(England and Wales) Regulations 1999**

SO/2014/038

**SCREENING OPINION REQUEST FOR PLANNING ENQUIRY
ENQ/2014/0390**

Site

LAND AT PICKHILL, BRIDGE FARM, CROSS LANES, WREXHAM



The Proposal

USE OF LAND FOR INSTALLATION OF GROUND MOUNTED SOLAR ARRAY WITH
GENERATING CAPACITY OF BETWEEN 3 AND 4MW.

The Location

As indicated in plan above.

Relevant History

None.

Screening Consideration

The proposal falls within Schedule 2 of the 1999 Regulations as an industrial installation for the production of electricity on a site in excess of 0.5ha. The issue for consideration is: ***will the project have significant effects upon the environment?***

The general criteria for assessing **significance** are provided in paragraph 33 of the Circular. In applying the general tests of significance the LPA must assess whether a Schedule 2 project is likely to have impacts that are of 'more than local importance'. It is not sufficient that the development will have off site local impacts. More than local importance means effects beyond their immediate locality, which give rise to substantial national or regional controversy, which may conflict with national policy on important matters. The fact that there are likely to be environmental effects beyond the site boundaries but within the general locality of the site does not therefore, in itself, constitute 'more than local importance'.

Schedule 3 of the Regulations raises certain selection criteria that must be taken into account:

- Characteristics of the development (it is more than local importance?)
- Location of development (is there a sensitive/vulnerable location involved?)
- Characteristics of potential impacts (would these be complicated or adverse?)

Characteristics of the Development Options

a. **Size** – The site is approximately 7ha and is currently agricultural land and is not occupied by any built development. The development would have a generating capacity of a maximum of 4 megawatts.

b. **Cumulative effect** – Planning permission was granted for EIA development for the erection of a prison some 475 metres to the north west of the site. I consider the main issue for consideration is landscape impact and ecological impact relating to greenfield runoff and the impact upon the newt population. Full consideration has been given to the condition of the existing land on the southern side of the River Clywedog isolated from newt mitigation imposed as part of the prison development. The land is also low lying and highly grazed and cultivated agricultural land. Newts have been recorded on the site but it is considered that mitigation could be possible which would not lead to impacts on the population.

The proposed site is lower than the prison site on the north side of the River Clywedog. It is considered that views of the site will be localised primarily to views from the south. It is not considered that the visual impact, set against the backdrop of an existing industrial setting will result in wider landscape impacts which cannot be mitigated locally.

c. **Use of natural resources** – the development will not result in the loss of specific natural resources other than those required for construction processes. The use of the land for the proposed use would not preclude its use of the land for agricultural purposes.

d. **Waste** – the development and operation of the site will not give rise to significant volumes of waste.

e. **Pollution and nuisance** – The siting, operation and maintenance of the development will not give rise to significant noise or pollution. There is some potential for light reflecting off the surfaces of the solar panels to cause nuisance however these impacts will be of local significance and can be mitigated by careful design and equipment selection. The traffic/noise associated with the construction will be short term and any associated impacts will be limited to the local area.

f. **Risk of accidents** – There is a low risk of accidents associated with the development.

Location of the Development

a. **Land use** – The site lies outside of a development boundary as defined by the Wrexham UDP. The land is Grade 3 and 4 agricultural land. It is not considered that the development would result in the irreversible loss of this land for agricultural purposes.

b. **Local natural resources** – There will be no significant impact upon local natural resources.

c. **Absorption capacity** – Bearing in mind the locality it is noted that: -

- the site has previously been developed for the same purpose and has previously benefitted from planning permission;
- the site is not a wetland;
- it is not on the coast;
- it does not relate to a mountain, forest, park or nature reserve;
- it does not sit within any European nature conservation designation;
- it does not affect any landscapes of historical, cultural or archaeological significance.
- An ecological survey has been submitted and it has agreed that there will be minimal impact upon local habitat. These issues will be dealt with through the prior notification procedure.

Characteristics of Potential Impacts

a. **Extent** – the visual impact of the development will be limited to the immediate vicinity of the site and from local viewpoints within the landscape.

b. **Transfrontier impacts** – There are no transfrontier impacts associated with this development proposal.

c. **Magnitude and complexity** – No significant or complex issues are anticipated.

d. **Probability** – The likely impacts of the development are clearly definable and the possibility of any unknown impacts is minimal.

e. **Duration, frequency and reversibility** – The impacts of the development will last for the operation lifespan of the development (25 years) after which the site can be restored to its original condition.

Accordingly, it is hereby certified that based upon the above assessment and the information known at this stage, no significant environmental impacts of more than local importance are identified that would justify a decision to require an Environmental Impact Assessment.

Signed:



Date:

5/1/18

Lawrence Isted

Head of Community Wellbeing and Development, Wrexham County Borough Council

References:

Town & Country Planning (EIA) (England and Wales) Regulations 1999 and in particular categories 1-10 of schedule 2

Welsh Office Circular 11/99 and in particular annex A



Registered Office: InTec, Parc Menai, Bangor, Gwynedd, LL57 4FG

Tel: 01248 672666

Fax: 01248 672601

Email: contact@caulmert.com

Web: www.caulmert.com