

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**

DESIGN AND ACCESS STATEMENT

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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.

1.2 Planning Application Documentation

1.2.1 This Design and Access Statement should be read in conjunction with the planning application Supporting Statement and associated submitted material to gain a full understanding of the proposed development. Together these documents provide a comprehensive assessment of the proposed development and its impact on the local environment.

2.0 THE APPLICATION SITE AND PROPOSED DEVELOPMENT

2.1 Location

- 2.1.1 The application 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.
- 2.1.2 The location of the site is shown on drawing number 2204.PLG.01.
- 2.1.3 The site 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.

2.2 Proposed Development

- 2.2.1 The application proposal is for an up to 4MW ground mounted solar array, set across approximately 6.8 ha of agricultural land.
- 2.2.2 The proposals constitute the installation of photovoltaic (PV) panels laid out in rows running across the site on an east-west alignment. Each array will be mounted on a simple metal framework.
- 2.2.3 Ancillary development including a temporary access track and construction compound, together with security measures such as fencing/gating and CCTV are also proposed.

3.0 DESIGN AND DEVELOPMENT CONSIDERATIONS

3.1 Introduction

3.1.1 In July 2014 the Welsh Government published an update to Technical Advice Note 12: Design which includes guidance on Design and Access Statements.

3.1.2 The guidance is clear that a Design and Access Statement must explain the design concepts and principles applied to the development, in relation to the following:

- Access;
- Character (including amount, layout, scale, appearance and landscaping);
- Community Safety;
- Environmental Sustainability; and
- Movement to, from and within the development.

3.1.3 A Design and Access Statement should demonstrate the steps taken to appraise the physical, social, economic and policy context of the development and explain how the design of the development takes that context into account in relation to its proposed use and each of the aspects specified above.

3.2 Development Context

Physical

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

3.2.2 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 public highway is 7.6ha.

3.2.3 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 Farm, an un-adopted track (Footpath ABE/19) provides access to the application site.

3.2.4 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.

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

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

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

- 3.2.8 The site is surrounded by grazing pasture land on all sides. 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.
- 3.2.9 Wrexham Industrial Estate is located approximately 200m to the north of the application site.
- 3.2.10 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 closest residential properties to the site.
- 3.2.11 Approximately 500m south-west of the site is the Wales and West Gas Plant.
- 3.2.12 Peter's Dingle, a wooded riparian corridor which runs west from the River Clywedog, lies approximately 400m to the south of the site. This screens the site from the B5130 and receptors to the south.
- 3.2.13 The site was fully assessed prior to the completion of design to ensure the proposal is compatible to its location.

Social

- 3.2.14 The provision of a solar array in this location will help to provide domestic energy security for the future.

Economic

- 3.2.15 The construction of the solar array will offer employment opportunities for local companies together with material expenditure.

Environmental

- 3.2.16 The Welsh Government's National Planning Policy clearly advocates the need for and benefits of renewable energy, including small scale schemes with low energy output.
- 3.2.17 The proposed development seeks to meet this demand by providing clean, renewable energy to the national grid through the use of the solar panels.

3.3 Character of the Proposed Development

Amount

- 3.3.1 The proposed development covers a total site area of 6.8ha and the installed capacity will be up to 4MW.

Layout

- 3.3.2 The layout of the solar array has been led primarily by functional requirements, thus the solar panel modules will be laid out in rows across the site, orientated to face south. Four inverters are also proposed in the corners of the site which will link the panels to the grid. A security

fence will be erected around the perimeter of the site. It is proposed that there will be 2 security cameras, one in the north-east corner of the site and one in the south-west corner of the site, located adjacent to the proposed inverter kiosks.

3.3.3 The site layout plan is available on drawing 2204.PLG.02.

Appearance

3.3.4 The proposed solar panels will be a maximum height of 2.1m, matt black in colour and will be set at an angle of 25° to the horizontal. The solar panels will be mounted on lightweight metal supports. Plan 2204.PLG.03 shows the solar panel dimensions.

3.3.5 The proposed inverter kiosks are 6.1m wide, 2.6 m high and 2.4m deep, and finished in a dark grey colour. Plan 2204.PLG.06 shows the inverter kiosk dimensions.

3.3.6 The proposed security fence will be 2.4m in height, constructed of dark green Weldmesh type fencing with three strands of barbed wire above, with a matching gate. Plan 2204.PLG.08 shows the fence and gate details.

3.3.7 The proposed security cameras will be mounted on galvanised steel poles 5m in height. Plan 2204.PLG.07 shows the CCTV camera dimensions.

Landscaping

3.3.8 All existing trees on the application site will be retained.

3.3.9 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.

3.3.10 A short length of hedgerow further north on the western boundary will be strengthened using additional native planting in the form of Blackthorn hedging, replicating an indigenous landscape feature.

3.4 Environmental Sustainability

Landscape Setting

3.4.1 The southernmost 150m of the site is identified as being within a Special Landscape Area. There are no other landscape designations covering the site or within the study area that are recognised at the national, regional and local level.

3.4.2 The surrounding landscape is well wooded and contained, and 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 as a result of the proposed development.

- 3.4.3 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.
- 3.4.4 Close views of the proposed development are limited to the existing Public Footpath (ABE/19) to the west of the site, however the strengthening of the hedgerow on the sites western boundary will help to absorb the development for receptors using the Public Footpath. There may be some distant partial views from the upper windows and gardens of several properties that lie approximately 1km from the site, and from Oak Road.
- 3.4.5 The overall impact of the proposed solar array on both landscape character and visual amenity will be low, initially, and this impact will diminish further as planting associated with the proposed development becomes established.

Biodiversity and the Local Environment

- 3.4.6 There are two non-statutory nature conservation sites located within the 1km of the site - Wrexham Industrial Estate Local Wildlife Site (LWS) to the north and Peter's Dingle LWS to the south. Protected species within 1km of the site include Great Crested Newts (GCN), badgers, otters, and a number of different species of reptile, bats and birds.
- 3.4.7 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.
- 3.4.8 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 as part of the Ecological Assessment that accompanies this application, 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.
- 3.4.9 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 the site are considered to be of low ecological value/potential.
- 3.4.10 The following buffer zones have been applied to the site layout, in order to mitigate sites potential ecological impact:
- A 7m un grazed buffer zone between the hedgerow and the proposed security fence;
 - A 5m buffer zone between the proposed security fence and the proposed solar array; and
 - A 12m buffer zone between the pond and the proposed solar array.

3.4.11 The Ecological Assessment demonstrates that provided the following recommendations are followed, the proposed development will have no residual impacts on 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.

3.4.12 Further to the above, the proposed development will result in the strengthening of the hedgerow along the northern part of the sites western boundary.

Agricultural Land

3.4.13 Whilst a small amount of the application site is borderline Grade 3a/3b agricultural 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.

Heritage

3.4.14 The Heritage Assessment that accompanies this 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.

Energy Efficiency

3.4.15 The proposed layout has been designed to ensure that the maximum use can be made of the solar capture of the proposed development site by aligning the panels in rows facing south.

3.4.16 The photovoltaic panels are designed to be non-reflective and are located away from areas of heavy shade in order to maximise efficiency of light absorption.

Sustainable Materials

3.4.17 The proposed development will utilise robust materials which are likely to have a long operational life. This will help to reduce the need for subsequent maintenance and repair work, resulting in “whole life” sustainability benefits.

Hydrology

3.4.18 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.

3.5 Movement to, from and within the development

- 3.5.1 Vehicular access to the proposed solar array is by an adopted unclassified 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.
- 3.5.2 There is no public transport access directly to the application site, although public transport services do serve Wrexham Industrial Estate which lies to the north of the application site.
- 3.5.3 The site of the proposed solar array is accessible on foot or by cycle and this will not be affected by the proposed development.

3.6 Community Safety

- 3.6.1 The proposed development will be secure, and there will be no public access to the solar array.
- 3.6.2 Access to the site uses a small section of Footpath ABE/19. The PRoW would remain open during the 12 week construction period, and the use of banks men where the site entrance meets the footpath when deliveries are taking place will ensure the safety of members of the public using the footpath.
- 3.6.3 HGV deliveries will be coordinated via a delivery rota system and deliveries will be controlled, thereby reducing the potential for conflict with users of the public footpath.

3.7 Development Plan Policy

- 3.7.1 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.
- 3.7.2 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.
- 3.7.3 Strategic Policy PS2 requires that development must not materially detrimentally affect countryside, landscape/townscape character, open space or the quality of the natural environment.
- 3.7.4 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.
- 3.7.5 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.

- 3.7.6 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.
- 3.7.7 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.
- 3.7.8 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.
- 3.7.9 The proposed development is consistent with and supportive of the provisions of the Development Plan.

4.0 ACCESS

4.0.1 The nature of the proposed development is of equipment installation and as such very limited access and on-site circulation is required.

4.1 Public Access

4.1.1 The proposed development will be secure, and there will be no public access to the solar array.

4.2 Vehicular Access

4.2.1 The proposed development will utilise the existing access to the site, which is via an unclassified access track which travels due north from the B5130 at Talwrn through Parkey Lodge Farm, and through an existing access gate off of Footpath ABE/19, through a track in the field to the west of the development site. The applicant has rights of access through Parkey Lodge Farm.

4.2.2 During the construction phase, vehicles will access and egress the development site through a new temporary opening in the hedgerow within the sites western boundary.

4.2.3 The whole construction timeframe for the solar array is programmed to be a maximum of 12 weeks, including 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.

4.2.4 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.

4.2.5 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.

4.2.6 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.

4.2.7 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.

- 4.2.8 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.
- 4.2.9 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.
- 4.2.10 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.
- 4.2.11 Due to the nature of solar photovoltaic installation, once installed, there is minimal onsite activity required during the life-cycle of the project. The applicant expects to visit the site once every month for maintenance activities.

4.3 Vehicle Parking

- 4.3.1 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.

4.4 Public Footpaths

- 4.4.1 Public Footpath ABE/19 runs to the north and west of the site linking the industrial estate to the existing access road and onwards to the B5130 in the south. An assessment of the landscape and visual impact of the proposal upon users of the public footpath was undertaken as part of the LVIA which accompanies this application.
- 4.4.2 Access to the site uses a small section of Footpath ABE/19, north of Parkey Lodge Farm. The PRow would remain open during the 12 week construction period, and thus access rights which are presently enjoyed in the general area will be maintained. It is proposed that banks men would stand where the site entrance meets the footpath when deliveries are taking place to ensure the safety of members of the public using the footpath.
- 4.4.3 HGV deliveries will be coordinated via a delivery rota system and deliveries will be spread evenly through the day, reducing the potential for conflict with users of footpath.
- 4.4.4 Once installed, vehicle movements to the site will be minimal, estimated to be once a month for maintenance purposes. As such, there would be no impact on the public footpath post construction.
- 4.4.5 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.

4.5 Disabled Access

- 4.5.1 The proposed development comprises operational plant and equipment. Under these circumstances, it is considered to be inappropriate to seek to provide disabled access in this instance.

4.6 The Development Plan

- 4.6.1 The proposed development accords with the provisions of Transport Policy T6 of the Wrexham UDP since it will not prejudice the safe and free flow of traffic on primary and core highway network.

4.7 Maintenance of Features that Ensure People's Access to the Development

- 4.7.1 The proposed development will utilise the existing access to the site, and this would be retained as part of the proposed development.
- 4.7.2 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.

5.0 CONCLUSION

- 5.1.1 This Design and Access Statement has been provided in support of the planning application for the proposed development of a solar array at Pickhill Bridge Farm, Cross Lanes, Wrexham.
- 5.1.2 The proposed development is inherently sustainable and, although the design has been led primarily by function, the context of the site has been fully considered and the scheme has been shaped by the desire to ensure that its visual and ecological impacts are minimised.



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