Installation of a solar farm with battery storage facility, substation and associated works at land at Cefn Park, to the north of Cefn Road and land at Five Fords Wastewater Treatment Works, LL13 0PA

Planning Statement

Novus Renewables Limited

REPORT REF: 321/PS

Date: April 2022.

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Document issue record

Version	Prepared by	Reviewed by	Issue to	Date
1	HD	JE	NRS	28.02.2022
2	HD	JE	NRS	06.04.2022
3	HD	AT	Public Consultation	13.04.2022

Executive Summary

Corylus Planning and Environmental Limited was instructed by Novus Renewable Serviced Limited to prepare and submit a full planning application to Wrexham County Borough Council for the installation of a solar farm with battery storage facility, substation and associated works at land Cefn Park, to the north of Cefn Road and land at Five Fords Wastewater Treatment Works, LL13 0PA

The site comprises a parcel of land to the north of Cefn Road measuring approximately 13.89 hectares in area and a smaller parcel of land to the south of Cefn Road within the Five Fords Wastewater Treatment Works

Within the parcel of land to the north of Cefn Road it is proposed to install a solar farm with a maximum export capacity of 9.9MW. A battery storage facility would also be located within the solar farm. This would have a maximum import/export capacity of 16MWh.

The site has been chosen due to its location within a Local Search Area as defined by the emerging Local Plan and the identification of an end user for the electricity generated which is the Five Fords Wastewater Treatment Works.

The potential impacts of the proposed development have been evaluated by a range of technical assessments which have demonstrated that it will not be harmful. The proposed development would not increase flood risk on or off the site, it would not result in unacceptable levels of noise and construction vehicles can be satisfactorily managed within the local highway network.

There are no statutory ecological designations within or adjacent to the site. An Ecological Impact Assessment, informed by ecological surveys has been submitted with the application which has set out the mitigation measures for the construction period, enhancements for biodiversity and the long term management of the site.

The proposed development would have no harmful impact upon the settings of designated heritage assets. Archaeological investigations by means of a gradiometer survey and targeted trenching have also been undertaken in support of the proposed development. These investigations will inform a scheme of mitigation which will ensure that the construction of the development will not harm archaeological remains.

A Landscape and Visual Impact Assessment has assessed the potential impact of the development upon the character and appearance of the landscape and has informed a scheme of mitigation planting. As it matures, this along with the retained vegetation will screen the solar farm and will reduce its visual impact. The overall harm that would result from the proposed development to the character and appearance of the landscape would be limited and would be outweighed by the public benefits of the proposal.

The Welsh Government has committed to achieving Net Zero by 2050. The operator of the Five Fords Wastewater Treatment Works, has set a target of carbon neutrality by 2040. The proposed solar farm will make a contribution to achieving these targets and the proposed battery store will provide resilience to the National Grid enabling an increased reliance upon renewable sources of energy.

The proposed solar development accords advice set out within Planning Policy Wales and the relevant Technical Advice Notes, and the policies of the adopted and emerging local plans.

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1 Introduction

This planning statement has been prepared on behalf of Novus Renewable Services Limited (the "applicant") to accompany a full planning application for a solar farm with a battery storage facility along with associated infrastructure at land at Cefn Park and Five Fords Wastewater Treatment Works, submitted to Wrexham County Borough Council (the "LPA")

The planning statement should be read in conjunction with the technical reports and assessments listed which have been produced to support the application. These are set out within Table 1 below.

Table 1: Summary of technical reports accompanying the application

Report	**Report Author**	**Reference number**	**Rev/version**
Arboricultural Report	Cheshire Woodlands	CW/10495-AS	26.08.2021
Archaeological Evaluation Report	Wessex Archaeology	257630.2	March 2022
Construction Traffic Management Plan	Transport Planning Associates	November 2021	01
Design and Access Statement	Corylus Planning and Environmental Limited	321/DAS	2
Detailed Gradiometer Survey	Wessex Archaeology	247431.04	November 2021
Ecological Impact Assessment	Etive Ecology	13 April 2022	1.0
Flood Consequences Assessment	Corylus Planning and Environmental Limited	321/SP10	V1
Glint and Glare Assessment	Neo-Environmental	06/10/2021	
Great Crested Newt Mitigation Plan	Etive Ecology	*Tbc*	
Heritage Environment Desk Based Assessment Draft)	Wessex Archaeology	247430.01	August 2021
Landscape and Visual Impact Assessment	Corylus Planning and Environmental Limited	321/04/22/LVA	3
Pre-application consultation report	Corylus Planning and Environmental Limited	*To be submitted with the planning application*	
Written Scheme of Investigation for Archaeological Geophysical Survey	Wessex Archaeology	247430.02	October 2021
Written Scheme of Investigation for	Wessex Archaeology	27430.03	December 2021

Report	Report Author	Reference number	Rev/version
Archaeological Evaluation			
Surface Water Management Plan	Corylus Planning and Environmental Limited	321/SP11	V1
Tree Protection Plan	Cheshire Woodlands	CW/10495-AS	25.08.2021

This statement will describe the location and context of the application site and the relevant planning policies. The statement will go on to assess the proposed development against these policies and will consider any other relevant material considerations.

2 Site location and context

The application site is located approximately 1 km to the south-east of Wrexham, approximately 150m to the west of Wrexham Industrial Estate (WIE) and approximately 650m north east of the Five Fords Wastewater Treatment Works (FFWTW). Other smaller areas of the application site are within the FFWTW.

The site comprises two parcels of land, the larger parcel, measuring 13.69 hectares in area is located to the north of Cefn Road and comprises arable fields. For the purposes of this report, the parcel of land to the north of Cefn Road will be referred to as “Compartment 1” to the west and “Compartment 2” to the east of the site.

Adjacent to the eastern boundary of Compartment 2, are industrial units which are accessed from Clywedog Road South to the east.

The two compartments are separated by a mature hedgerow with field trees. The farmstead of Little Llywn Onn is situated at the western edge of Compartment 1.

The northern boundary of both fields is delineated by mature hedgerow with an assemblage of large trees.

The smaller parcel of land, measuring 0.86 hectares, is located to the south of Cefn road within the FFWTW operated by Dwr Cymru Welsh Water (DCWW).

There are a number of mature trees within and adjacent to the site.

3 The Proposed Development

The proposed development is for a solar farm and battery storage facility with associated infrastructure. It has been designed around the concept of generating renewable power to be delivered directly to the FFWTW through a private-wire connection.

There are three distinct elements to the proposed development:

1. Solar photovoltaic panels and associated on site infrastructure
2. A battery storage facility.
3. Substation & Private Wire cable connection

3.1 Solar Panels

3.1.1 The Technology

Solar farms generate electricity from sunlight using photovoltaic panels. The panels are mounted on to a framing system which is fixed into the ground. The panels are dark in colour and tilted to absorb as much light as possible. Although the reference is to "sunlight", the panels actually absorb daylight (i.e. any visible light) so will continue to generate electricity, even on a cloudy day.

Electricity is generated by the panels is in Direct Current (DC) form and converted to Alternating Current (AC) form by inverters. Voltage is stepped up by transformers within the solar farm. From these, the electricity flows through underground cabling to a customer substation and then to the Distribution Network Operator (DNO) substation to be exported to the local grid network. An alternative method of export is through a private wire to provide electricity directly to high demand users, as is the case with this proposal.

Solar farms are now relatively common features within the landscape and will increasingly become so as traditional fossil- fuelled generation is replaced by renewables. The development of solar farms in the UK was stimulated over the period 2011-2017 by the availability of Government subsidies. These are no longer available, but new solar farms are viable without them due to improvements in technology which has resulted in more efficient, longer lasting panels, occupying less space than would have been possible in the past.

3.1.2 The Proposed Solar Farm

The layout of the proposed solar farm is shown on plan number CE-321/4/2 Rev C.

The solar arrays will have a maximum height of panels above ground of 3.1 m (at their rear edge) and the angle of tilt is set at approximately 20-25 degrees with a height on the front edge of around 800mm to 1100mm. String inverters will be sited to the rear of the panels. The maximum export capacity will be 9.9MW.

There will be four pairs of transformers within the site, located adjacent to the internal access track. A shipping container type structure will be sited to the south-east of the battery store to be used for the storage of spare components and equipment required for management and maintenance. Storing commonly required spare parts on site removes the need for additional trips to site in event of maintenance activities being required, and reduce potential down time for parts of the solar farm.

The installation will be fenced to a maximum height of 2 metres with post and mesh style deer fencing, incorporating small openings to allow smaller wildlife travel into and across the site. The site will be monitored by CCTV mounted on poles and no external lighting is proposed. Examples of the supporting infrastructure can be seen within the accompanying Design and Access Statement.

3.2 Battery Storage

3.2.1 The Technology

Renewable sources of electricity are becoming increasingly important to enable net zero targets for carbon emissions to be met. However, renewable electricity generation, such as solar and wind power is intermittent. Therefore, to deliver a consistent supply of electricity to homes and businesses, energy storage will be required.

There are a number of methods by which energy can be stored and exported to the grid, but battery storage is one of the cheapest and least impactful options available in the UK. It is one of the most frequently used technologies and the efficiency of batteries is constantly improving. In simple terms, battery storage works by importing electricity from the distribution network, or by charging directly from a renewable generator (when co-located with a solar farm) at times of low demand. The electricity is then stored within the battery modules (usually lithium-ion batteries as proposed within this application). The stored electricity is exported to the distribution network at times of high demand.

Within the proposed development, the battery modules will be stored within shipping container type structures, arranged within a racking system with an internal cabling and a fire suppression system. Each container will have a heating, ventilation and air cooling (HVAC) unit. The maximum import/export capacity of the battery storage facility will be 16MW.

Battery storage is relatively simple to install as the containers themselves are delivered ready assembled onto site. Battery storage is proposed within the application to maximise the efficiency of the proposed PV installation and control export through the private wire to meet demand. An alternative to battery storage is peaking plants (also known as spinning/operational reserve). They are effectively backup generators that come online at times of peak demand, but these have no storage/import ability, just the ability to export and are therefore simply standby systems. Many are coming to the end of their operational life and being fossil fuel driven are less desirable for future use and are unlikely to be replaced by similar technology.

Another alternative to battery storage is flywheels or gravity storage. These are not yet deployable on any scale within the UK. The UK grid system has had a number of pumped hydro and thermal storage systems that have been available for decades, but no new facilities like these have been built for some time.

Battery storage is therefore the most straightforward form of energy storage, which avoids additional reliance upon fossil fuels and significant, often irreversible, engineering works.

By the end of 2019, UK battery storage capacity had topped 900MW and the technology has improved greatly in recent years. The drive for electric vehicles has meant huge investment into battery technology, vastly improving performance and reducing price. It is a safe and mature technology.

In summary, battery as a grid connected storage is competitive and widely available. Relative to their size, batteries have high storage density, they take up relatively little space, are flexible, easy to build and therefore have minimal environmental impact. Battery storage facilities have the ability to react with sub-second response times that many technologies do not, which is beneficial for the grid.

3.2.2 The Proposed Battery Storage Facility

The battery storage area will be located towards the north-western boundary of Compartment 2 and comprises:

- Palisade fencing
- A switchroom building
- Eight battery storage containers sited on concrete plinths either side of the Power Conversion Systems
-

3.3 Substation and Private Wire

A private wire connection from a renewable energy development allows businesses who use large amounts of power to secure their own dedicated, low cost and traceable, carbon free energy supply.

Connecting directly to a renewable generating project means the amount of electricity required from the grid is reduced and allows the user to avoid grid charges and therefore buy the power at significantly lower cost reducing their overall energy bills. In addition, by sourcing directly from a renewable installation, the user can guarantee long term zero carbon generation from the renewable energy source unlike grid power which still has significant carbon content.

The proposed development includes a substation to be located to the south of Cefn Road. This will comprise customer and DNO substation containers and two transformers. The DNO substation requires its own access for operational and maintenance reasons. There will be a connecting cable from the Cefn Park site to connect the solar and battery elements to the substation and the FFWTW internal network.

The substation is required to transform the power up to 33kV and to manage power flows between the site, the FFWTW and the grid. It has been sited within the FFWTW site on land which was formally occupied by a dwelling. As part of the planning application at FFWTF for solar panels (LPA reference P/2014/0700) this area had been identified as scrub planting. To compensate for the loss of this, a new area of scrub planting is proposed to the north of the sub-station.

A cable will be required to connect the solar and battery elementsin the northern area of the site and the substation in the southern area. This is likely to be achieved with a directional drill from the northern site to pass under Cefn Road and the River Clywedog, emerging on agricultural land adjacent to the FFWTW access road, therefore minimising disturbance to users of Cefn Road. The necessary permits for this work, if required, will be sought from the relevant authorities.

3.4 Construction, operational and decommissioning periods

The construction period for the proposed development is expected to take around 16 weeks and a Construction Traffic Management Plan has been submitted with the application.

Once operational, the proposed development will require 1-2 visits per month for maintenance. Trips for inspection and maintenance will be made by cars or small/medium sized vans and usually involve one or two personnel. Once operational, the management of a solar farm requires very little site presence.

The operational period of the proposed development will be 40 years from the first export of electricity. At the end of this period, the site will be decommissioned. All structures and hard surfacing will be removed, and the land will be restored to agricultural use. The decommissioning and restoration processes will be controlled by a decommissioning statement to be secured by a planning condition.

3.5 Pre-application advice

Pre-application advice was sought from the LPA in the summer of 2021, reference ENQ/2021/0207. At that stage, it was proposed that the solar farm covered a wider area and extended into the field to the south-east, i.e. the higher risk flood zone and advice received at the time reflected that wider site area. The full pre-application response is attached at Appendix A.

The advice note received provided guidance on flood risk and drainage, landscape impact, neighbour amenity, highways impact, ecology and trees. Advice was also provided regarding development within a Green Wedge. In conclusion your officers advised:

"In the absence of supporting information the scope of this response is limited. From the information provided it would appear that the principle of installing solar panels within the green barrier in this location could be acceptable. However, it would need to be demonstrated through the submission of additional information that all other material planning considerations are dealt with satisfactorily. In particular there is a concern that given the site would be clearly visible from adjacent public vantage points that there is a concern in relation to landscape and visual impact. It would need to be demonstrated that proposal preserves the openness of the site. Supporting information would be required to be submitted to demonstrate acceptability in all other regards and you would be required to fully justify the proposals against national and local policy".

An extract of the plan submitted with the request for pre-application advice is shown at Figure 1 below. Following on from the feedback received, solar panels were removed from the area of the site that is at a higher risk of flooding. Panels were also moved away from the boundary of the site with Cefn Road and additional hedgerow planting incorporated.

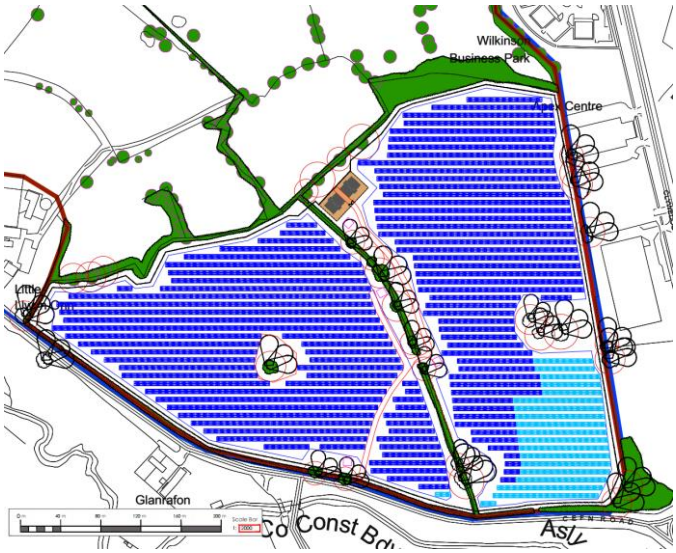

Figure 1: Extract of plan considered by the LPA at the pre-application stage

4 Planning Policy and Legislation

4.1 Moving towards a Net Zero Future

Carbon dioxide (CO_2) is a major contributor to global warming, causing climate change. That is why the Government has committed to reduce carbon emissions. Alarming figures have recently been published[1], demonstrating the impact of global warming upon the UK's climate:

- 2020 was the third warmest year for the UK in a series from 1884, and also the third warmest for Central England in a series from 1659.
- All the top 10 warmest years for the UK in the series from 1884 have occurred since 2002.
- 2020 included the fifth warmest winter (December 2019–February 2020).
- 2020 was the UK's fifth wettest year in a series from 1862, with 116% of the 1981–2010 average and 122% of the 1961–1990 average rainfall.
- 2020 was one of the least snowy years on record.
- 2020 was the eighth sunniest year for the UK in a series from 1919, with 109% of the 1981–2010 average and 113% of 1961–1990 average sunshine hours.

In 2016, the UK signed the Paris Agreement, which is a global agreement between nations to reduce global warming, specifically to keep the increase in global temperature to below 2°C above pre-industrial levels and to pursue efforts to limit the increase to 1.5° C.

The Paris Agreement requires each country to determine, plan and report on the contribution that it takes to mitigate global warming, the Nationally Determined Contribution (NDC). In December 2020, the UK Government communicated its new NDC to the United Nations Framework Convention on Climate Change (UNFCCC). The NDC commits the UK to reducing economy-wide greenhouse gas emissions by at least 68% by 2030, compared to 1990 levels.

This ambitious target of net zero carbon emissions by 2050, can be achieved, but according to the National Grid publication "Future Energy Scenarios"[2] it requires*..." immediate action across all key technologies and policy areas and full engagement across society and end consumers".* This will includes at least 1.4 GW of solar electricity to be built every year from 2020 to 2050.

Within Wales, the move towards a low carbon future was set out in "Energy Wales: A Low Carbon Transition"[3] The document set out the Government's ambition to create a "sustainable, low carbon economy for Wales". How this would be delivered was set out within the subsequent Delivery Plan[4]. The delivery plan identified that "*In the short term, gas, nuclear and bio-energy will provide the energy to compensate for the intermittency in supply from renewable resources. In the medium to long term, the development of energy storage technologies and a next-generation 'smart grid' will provide further scope for managing the intermittency and balancing supply and demand more effectively".*

The Environment Act became law in March 2016. It sets out the approach for the sustainable management of natural resources of Wales to help to mitigate for and adapt to the impacts of

[1] International Journal of Climatology. Royal Meteorological Society July 2021
[2] Future Energy Scenarios. National Grid.ESO. July 2020
[3] Energy Wales: A Low Carbon Transition. Welsh Government. March 2012
[4] Energy Wales: A Low Carbon Transition Delivery Plan. Welsh Government. March 2014.

climate change. The Act has set targets for the lowering of greenhouse gas emissions by 2050. The Act places a duty on the Welsh Ministers to ensure that by that date, greenhouse gas emissions are at least 80% lower than the baseline. To achieve this, Ministerial commitments have been made which seek:

1. for Wales to generate 70% of its electricity consumption from renewable energy by 2030;
2. for one gigawatt of renewable electricity capacity in Wales to be locally owned by 2030; and
3. for new renewable energy projects to have at least an element of local ownership by 2020.

In December 2020, the Climate Change Commission set out a number of recommendations for Wales for new targets,[5] including what was described as an "ambitious target" to reduce all greenhouse gas emissions to Net Zero by 2050, with interim targets of a 63% reduction in greenhouse gases by 2030 and a 89% reduction by 2040. These targets were approved by the Senedd Cymru in March 2021

"Prosperity for all: A low carbon Wales"[6] is a collection of 100 policies and proposals to enable the Country to meet its 2016 to 2020 carbon budget and 2020 emission reduction targets. The publication identifies that in 2016, 34% of all Wales' emissions came from the Power Sector, by the year 2030 these emissions will have reduced by 37%.

The Covid-19 pandemic has generated calls for a "green recovery" and in June 2020, the Climate Coalition[7] (which includes the Stop Climate Chaos Cymru organization) wrote to the UK Prime Minster with a plan for a "Green, Fair and Healthy Recovery". This seven-point plan includes

1. A sustainable economic recovery in the UK must promote climate resilient investments and growth in green jobs, including, speeding up development of a zero-carbon power system built to support the cleanest and cheapest forms of energy;
2. Accelerate private sector investment in the UK clean energy transition;
3. The Net-Zero Rule;
4. Protect and restore UK ecosystems and nature-rich green space.

In December 2020, the UK Government published the "Energy White Paper: Powering our Net Zero Future". The paper follows up on the Prime Minister's ten-point plan for Government investment into green energy with the aim of levering billions of pounds of private investment to support the creation of up to 250,000 jobs by 2030. The White Paper sets out a strategy for a wider energy system that:

1. Transforms energy
2. Supports a green recovery
3. Creates a fair deal for consumers.

The shift to "Clean Energy" offers an opportunity to ensure that energy costs are fair and affordable. The White Paper identifies that the cost of electricity has traditionally been determined by the underlying price of gas or coal and the intention of the White Paper is that there will be a positive change for consumers as more electricity is generated from renewable sources.

[5] The path to Net Zero and progress on reducing emissions in Wales; Climate Change Commission. December 2020
[6] Prosperity for All: A Low Carbon Wales. Welsh Government. March 2019
[7] https://www.theclimatecoalition.org/greenrecovery

Since the White Paper the UK hosted the COP26 conference in Glasgow. Before this event the UK Government committed to accelerate commitments in the White Paper and announced a target to decarbonising the electricity system fully by 2035, 15 years earlier than previously planned.

At the same time the UK has experienced an energy price crisis driven by exposure to the gas wholesale market on which the UK is heavily reliant. The energy price cap has recently risen by 54% with the average household bill jumping to nearly £2,000 a year and further increases are likely. In response to this, the "British Energy Security Statement" (BESS) was published by the UK Government in April 2022. Amongst a range of measures proposed, to ensure that the UK has a decarbonised and secure electricity system by 2035, is for increased and fasterdelivery of renewable energy developments and the need for more efficient, locally responsive systems. The BESS specifically describes an expectation of a "fivefold" increase in solar capacity from 14GW to 70GW by 2035 and support where this is co-located with storage. Solar has been shown as the cheapest form of generation as forecast in the government's own data[8] and is identified as one of the key technologies to improve energy security, protect household energy budgets and provide new employment opportunities

Wrexham Borough Council declared a Climate Emergency in September 2019 and established a Carbon Project Board. The Board is developing a "Decarbonisation Plan" to target the decarbonisation of council operations and promote the protection and enhancement of the natural environment. In addition, and as will be discussed within the next section, the Council has identified areas within the Borough that are suitable for renewable energy developments. These will be supported by a policy within the emerging Local Plan.

There is therefore an overwhelming drive, both internationally and nationally, to reduce carbon emissions quickly and efficiently to prevent the devastating effects of Climate Change. In addition to that, there is an ambition that the economic recovery from the Covid-19 pandemic is a green recovery.

4.2 Planning Policy

4.2.1 Local Plan Policy

The starting point for the determination of any planning application is set out in law within Section 38(6) of the Planning and Compulsory Purchase Act 2004. This states that:

"*If regard is to be had to the development plan for the purpose of any determination to be made under the planning Acts the determination must be made in accordance with the plan unless material considerations indicate otherwise*".

The relevant Development Plan is the Wrexham Unitary Development Plan 1999-2011, adopted in 2005. The policies that are of particular relevance to the consideration of the application are those that relate to renewable energy and biodiversity.

- Strategic Policy PS2 (The Broad Location of Development)
- Strategic Policy PS3 (The Broad Location of Development)

[8] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/911817/electricity-generation-cost-report-2020.pdf

- Strategic Policy PS11 (Biodiversity)
- Strategic Policy PS12 (Renewable Energy)
- Policy GDP1 (Development Objectives)
- Policy EC1 (Green Barriers)
- Policy EC2 (Agricultural Land)
- Policy EC4 (Hedgerows, Trees and Woodland)
- Policy EC6 (Biodiversity Conservation)
- Policy EC9 (Listed Buildings of Special Architectural or Historic Interest)
- Policy EC12 (Development and Flood Risk)
- Policy EC13 (Surface Water Run-off)

The adopted Local Plan is due to be replaced by a new local plan the "Wrexham Local Plan 2013-2028". The draft Local Plan was submitted by the LPA to the Welsh Government and public examination has been undertaken. At the time of writing this statement, the LPA is due to consult on the "Matters Arising Changes" which have been identified by the Planning Inspectors and are required to ensure that the local plan is sound. The proposed amendments primarily relate to the delivery rates of housing and Gypsy and Traveller sites. The draft policies that are relevant to the consideration of this application have been considered by the Planning Inspector and further evidence is not required. These policies are:

- Policy RE2 (Renewable Energy Schemes)
- Policy SP7: (Green Wedge)
- Policy SP12: (Transport and Accessibility)
- Policy SP15 (Natural Environment
- Policy SP16 (Historic and Cultural Environment)
- Policy SP19 (Climate Change
- Policy SP20 (Green Infrastructure)
- Policy DM1: (Development Management Considerations)
- Policy NE3: (Trees, Woodlands and Hedgerows)
- Policy RE1: (Development and Renewable Energy/Low Carbon Technology)
- Policy RE2: (Renewable Energy Scheme)
- Policy MW5: (Sustainable Waste Management)

The policies are not yet adopted but they can be afforded weight and will be material considerations for the purposes of determining the planning application. It is for the LPA to determine the amount of weight can be applied with regard to the underlying evidence and background policies[9]. However, it is considered that given the progress of the emerging Local Plan, and the absence of amendments required to the policies in question, they can be afforded significant weight.

4.2.2 Planning Policy Wales Edition 11 (February 2021)

Central Government planning policies for Wales are set out within Planning Policy Wales Edition 11 (PPW). It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars,

[9] Development Plans Manual Edition 3 (March 2020)

and policy clarification letters, which together with PPW provide the national planning policy framework for Wales.

PPW is very supportive of renewable energy*:* low carbon electricity must become the main source of energy in Wales (para 5.7.1).

Paragraph 5.9.15 makes clear that "energy generation is of national significance and there is a recognised need to optimise renewable and low carbon energy generation."

The TANs that are considered to be of particular relevance to the consideration of this application are as follows:

- TAN 5: Nature Conservation and Planning (2009)
- TAN 11: Noise (1997)
- TAN 15: Development and Flood Risk (2004)
- TAN 24: The Historic Environment (2017)

4.2.3 The National Plan

Future Wales – The National Plan 2040 was published in February 2021 and replaces the Welsh Spatial Plan. Unlike the Spatial Plan, the National Plan forms part of the development plan for Wales.

Policy 17 (Renewable and Low Carbon Energy and Associated Infrastructure) of the National Plan states that the Welsh Government "strongly supports" the principle of developing renewable and low carbon energy from all technologies and at all scales to meet future energy needs.
In determining planning applications, decision makers must give "significant weight" to the need to meet the country's international commitments and the target to generate 70% of consumed electricity in Wales by renewable means by 2030.

4.3 Site Selection

One of the key considerations when considering a potential site for the development of a solar farm is the availability of a connection. This is usually the "grid" i.e. energy infrastructure which is operated either by National Grid, or the District Network Operator (DNO). Alternatively, the end user may be a commercial or industrial facility, connected to the solar farm by a "private-wire". In selecting the proposed site, the proximity to an end user, i.e. FFWTW, was a key consideration.

Another key consideration when selecting the site was the location within a "Local Search Area" (LSA) as defined by policy RE2 (Renewable Energy Schemes) of the emerging Local Plan. The LSAs are areas which have been assessed at a strategic level, as being suitable for renewable energy developments and in the case of solar farms, suitable for installations of 5MW to 50MW. The LSAs have been identified based upon the potential performance of the solar panels, environmental and historical constraints and the availability of a grid connection. The location of the LSA within this part of the Borough is shown at Figure 2.

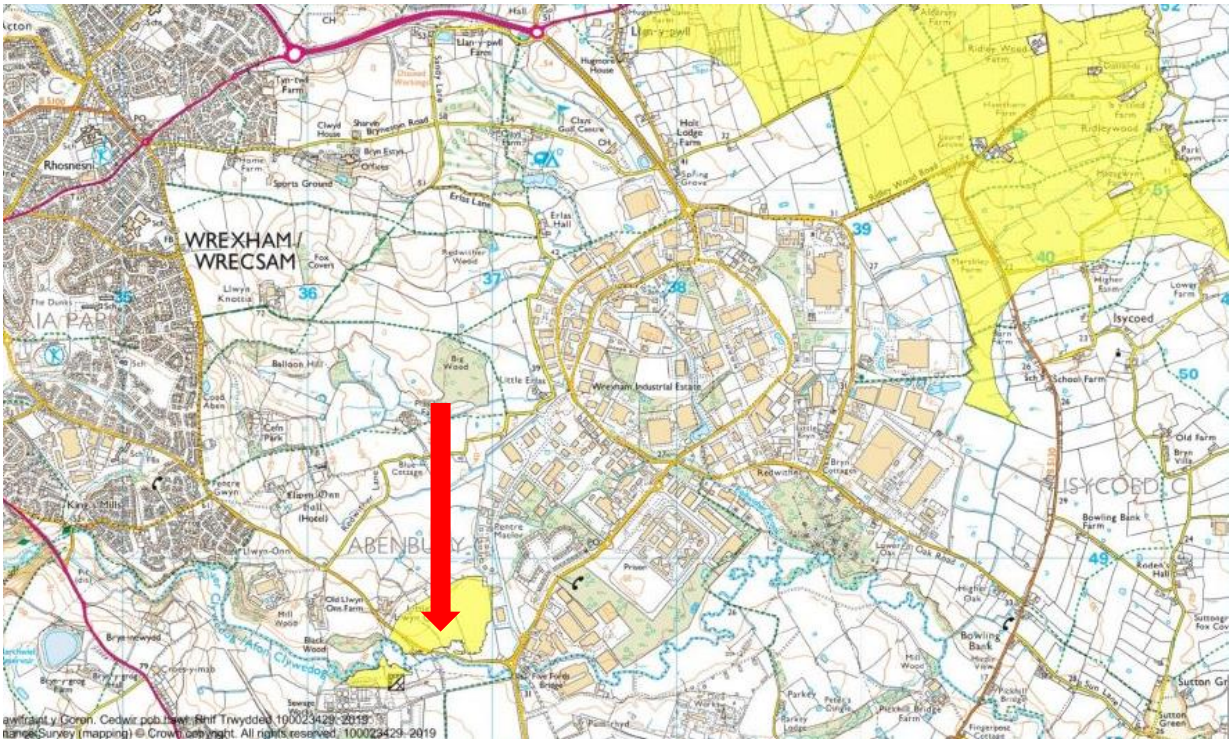

Figure 2: Extract of the LSA (Evidence base reference EBR02 Area 3. The location of the site is indicated by the red arrow.

4.4 Principle of Solar Farms and Battery Storage

PPW, at paragraph 3.30 states that "*The transition to a low carbon economy not only brings opportunities for clean growth and quality jobs, but also has wider benefits of enhanced places to live and work, with clean air and water and improved health outcomes".*

The need for an effective electricity grid network and an integrated approach to the delivery of energy developments and additional electricity grid network infrastructure is recognised at paragraph 5.7.8 of PPW.

Paragraph 5.7.12 states that: *"Energy storage has an important part to play in managing the transition to a low carbon economy. The growth in energy generation from renewable sources requires the management of the resultant intermittency in supply, and energy storage can help balance supply and demand. Proposals for new storage facilities should be supported wherever possible".*

Strategic policy (PS12) of the adopted Local Plan refers to developments of renewable energy. The policy states that they will be supported provided that "*…the wider environmental benefits are not outweighed by any detrimental impact of the proposed development…on the landscape, public safety and the local environment*".

Strategic policy PS2 (The Broad Location of Development) advises that "...*Development must not materially detrimentally affect countryside, landscape/townscape character, open space, or the quality of the natural environment".*

Within the emerging local plan, one of the key objectives, SO10 is to "*Reduce carbon emissions and maximise our resilience to and mitigate and adapt to the impact of climate change*" which will be achieved in part through support for the use of renewable energy resources and low carbon technology. Policy RE2 (Renewable Energy Schemes) supports proposals to generate energy from renewable and low carbon sources and as previously discussed, the policy seeks to direct solar farms of 5-50MW to LSAs.

4.5 Agricultural Land Classification

Within PPW at paragraph 3.5.9, it is advised that higher grade agricultural land should only be developed if there is an overriding need for development and either previously developed land or land in lower agricultural grades is unavailable or available lower grade land has an environmental value.

Policy PS3 of the adopted Local Plan states that "...*Development should use previously developed brownfield land … in preference to the use of greenfield land, wherever possible, particularly so where greenfield land is of ecological, landscape or amenity value, or comprises agricultural land of grades 1, 2 or 3a quality".* Policy EC2 (Agricultural Land) states that development on best and most versatile agricultural land (i.e. grades 1,2 and 3a) will only be permitted if it does not lead to the irreversible loss of that land. Policy SP15 (Natural Environment) of the emerging local plan supports development that, amongst other criteria, protects, conserves and enhances the quality of natural services, which includes soils.

The Predictive Agricultural Land Classification maps[10] show that the site is almost entirely Grade 3b agricultural land. This is shown at Figure 3.

Within the pre-application response, Officers advised that because only a small part of the site was Grade 3a and at the edge of the site, a soil survey would not be required. It is also of note that any topsoil removed to accommodate the installation of roads and infrastructure will be stored within bunds at the site.

The location of the substation, according to the maps, appears to be Grade 3a land. However, the substation would be located on previously developed land, this area until recently being occupied by a dwelling. Again, the response from Officers at the pre-application stage was that a survey would not be required.

[10] DataMapWales

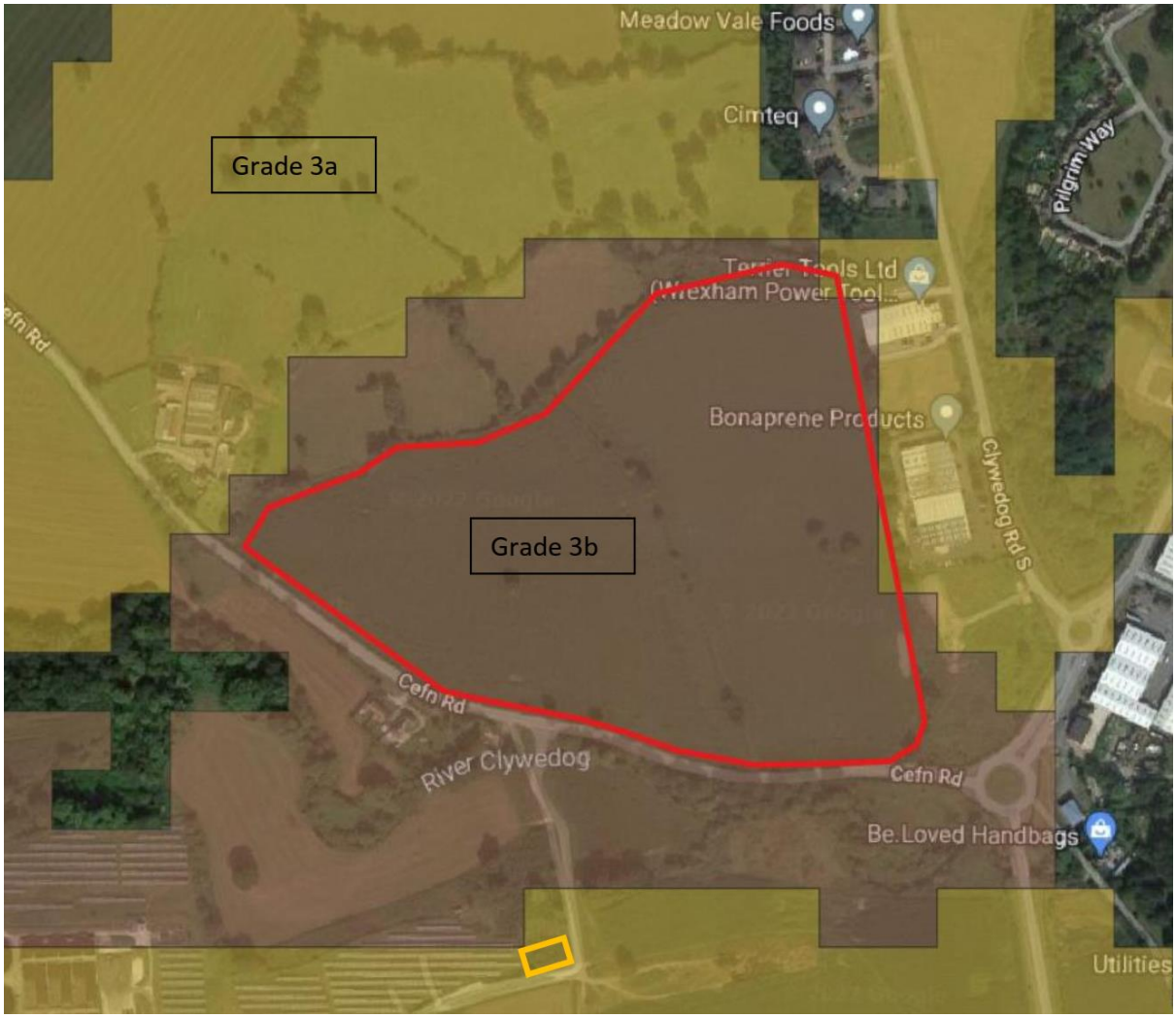

Figure 3: ALC Classification. The Northern site is outlined in red. The substation location is highlighted in orange.

Taking the land out of intensive arable practices such as frequent tilling and ploughing for up to 40 years will give rise to further benefit of carbon sequestration and storage. The area in and around the panels will be grazed by sheep, and when the site in no longer is use, the equipment will be removed, and the land restored to its former condition and operation.

The proposed development accords with policies PS3 and EC2 of the adopted local plan and the advice contained within PPW.

4.6 Biodiversity, Trees and Green Infrastructure

PPW at 6.4.21.2 advises that LPAs should ensure that *"features and elements of biodiversity or green infrastructure value are retained on site, and enhanced or created where ever possible, by adopting best practice site design and green infrastructure principles"*. Trees, woodlands, copses and hedgerows are recognised within the PPW for being of great importance for biodiversity; paragraph 6.4.24 states that they *"… make a valuable wider contribution to landscape. They also play a vital*

role in tackling climate change by locking up carbon, and can provide shade and shelter, a sustainable energy source and building materials".

TAN5 (Nature Conservation and Planning) sets out a number of key principles for "positive planning for nature conservation". For the planning system in Wales, this includes looking for "*developments to provide a net benefit for biodiversity conservation with no significant loss of habitats or populations of species locally or nationally; and plan to accommodate and reduce the effects of climate change by encouraging development that will reduce damaging emissions and energy consumption and that help habitats and species to respond to climate change."*

Strategic policy PS11 (Biodiversity) of the adopted local plan gives encouragement to proposals which improve the biodiversity value of a site. Policy EC4 (Hedgerows, Trees and Woodland) requires development proposals to provide for the conservation and management of hedgerows, trees and other natural landscape features. New planting is required in order to enhance the character of the landscape.

Policy EC6 (Biodiversity Conservation) states that "*development either within or close to sites of biodiversity interest will only be permitted where it can be clearly demonstrated that the need for the development outweighs the need to safeguard the intrinsic nature conservation value of the site. Where such development is permitted, damage should be kept to a minimum and compensatory measures should be provided.*". The policy requires measures to improve the biodiversity value of sites and enhance their natural conservation interest.

Within the emerging local plan, policy SP15 (Natural Environment) states that development will be supported where it protects, conserves and enhances the natural environment. This includes protected species and their habitats and natural landscape features, such as trees and hedges. Policy NE3 (Trees, Woodlands and Hedgerows) seeks to protect trees, woodlands and hedgerows and sets out that avoiding adverse or detrimental impact on them should be the primary objective of any proposal. Policy SP20 (Green Infrastructure) requires new developments to maintain, and where appropriate, enhance Green Infrastructure on or near a site.

There are no statutory designations within the site. The River Dee Site of Special Scientific Interest (SSSI) and the River Dee and Bala Lake Special Area of Conservation (SAC), are approximately 4km to the east of the site and the Sontley Marsh SSSI lies approximately 2.6km to the south-west of the site. Within 1km of the site are two Local Wildlife Sites, Marchwiel Marsh and Cefn Park. To the east of the site lies the Wrexham Industrial Estate (WIE). The WIE is a Living Landscape, managed by the North Wales Wildlife Trust and is known to support a variety of plant and animal species, including Great Crested Newts (GCNs).

The application has been accompanied by an Ecological Impact Assessment (EcIA) which has been informed by an extended Phase 1 survey, breeding bird surveys and Great Crested Newt eDNA testing of eight ponds within 500m of the site.

The proposed layout includes a variety of ecological mitigation and enhancement measures, including woodland, scrub and hedgerow planting. Within the Northern site, a wildlife enhancement area is proposed which includes a pond and two hibernacula. The proposed development will not remove any trees or include any external lighting and therefore any potential bat activity will not be affected.

The construction period can be managed by a Construction Ecological Management Plan to be secured by condition. This would set out ways in which the construction of the site will be managed

to avoid harm to ecology, e.g. through the appropriate timing of works. The long-term management of the solar farm can be secured by the submission and approval of a Landscape Ecological Management Plan, again to be secured by condition. The applicant is aware that a Protected Species License will be required from NRW prior to the commencement of development, for Great Crested Newt.

The layout of the proposed development has been informed by an Arboricultural Impact Assessment, and the PV panels and infrastructure have been sited so as to avoid damaging encroachments into the Root Protection Zones of the mature trees within the site. Trees and hedgerows will be retained for their ecological value but also to provide screening of the proposed development.

The proposed development would not be harmful to biodiversity and it will be possible to deliver and manage mitigation and enhancement measures within the site for the lifetime of the development to deliver an overall positive ecological impact. The proposed development is considered to accord with advice contained within PPW, TAN5, and local plan policies PS11, EC4 and EC6.

4.7 Noise and Air Pollution

PPW, at paragraph 5.9.20 states that "*Planning authorities should also identify and require suitable ways to avoid, mitigate or compensate adverse impacts of renewable and low carbon energy development. The construction, operation, decommissioning, remediation and aftercare of proposals should take into account..the need to minimise impacts on local communities, such as from noise and air pollution, to safeguard quality of life for existing and future generations".*

At paragraph 6.71, PPW states *"Air, noise and light pollution can have negative effects on people, biodiversity and the resilience of ecosystems and should be reduced as far as possible".*

Policy GDP1 (General Development Principles) states, amongst other criteria, that all new development should "… *ensure the safety and amenity of the public and safeguard the environment from the adverse effects of pollution of water, land or air, hazards from industry and quarrying, and associated noise, odour or vibration arising from development*". All new development should not result in contamination.

In respect of noise, TAN 11 (Noise) states, at paragraph 8 that "*Local planning authorities must ensure that noise generating development does not cause an unacceptable degree of disturbance. They should also bear in mind that if subsequent intensification or change of use results in greater intrusion, consideration should be given to the use of appropriate conditions.".* It is also reiterated at paragraph 15 that the granting of planning permission does not prevent the use of statutory powers to control noise.

Noise will occur during the construction and decommissioning periods, but these will be for limited periods of time. Furthermore, the hours of construction/decommissioning can be conditioned if it is deemed to be necessary.

The main source of noise within the proposed development will be the battery store which has been sited at the northern boundary of the site, approximately 300m away from residential dwellings to

the west and the south of the site and approximately 200m to the east of the industrial units at Clyweddog Road South.

Neither the solar park nor the battery storage facility will generate any emissions to air.

The proposed development is considered to accord with policy GDP1 and TAN11.

4.8 Economic Benefit

The proposed solar farm would provide economic benefits during the construction period, directly through employment where possible, and indirectly through the use of local supply chains and services. Once operational, the development will not require on site employees but will result in additional employment through long term maintenance and management of the site. It will support the rural economy by supplementing the income from agriculture.

As has previously been discussed in this statement, the proposed solar farm will be connected to the FFWTW via a private-wire.

DCWW operates the FFWTW and is a not-for-profit water company providing essential public services to over 3 million customers in Wales and Herefordshire. They are one of the largest energy users in Wales with an annual demand of 500GWh of electricity and an annual bill of nearly £50m. 'Welsh Water 2050' was produced to guide DCWW's resilience and environmental responsibility and strategy for the next 30 years and produced in accordance with the Well-Being of Future Generations (Wales) Act 2015. It outlines their journey to Net Zero and an overall target to reach carbon neutrality by 2040. Within this roadmap are 5 core pillars; one of these, 'Powering a Cleaner Future' outlines the ambition to become an energy neutral business, targeting energy reduction by increasing renewable generation as their main aim with a goal of reaching 100% self-sufficiency by 2050.

The proposed development has the ability to offset electricity demand at FFWTW that would otherwise have come from the grid and therefore will play a valuable role in helping meet DCWW's ambitions providing a long-term source of renewable electricity. The applicant expects to provide DCWW with significant volume of electricity, which annually would be the equivalent to over 3% of DCWW's total company demand across all its operational sites. This will have a meaningful impact on DCWW's energy costs and help keep consumer bills down and as a not-for-profit water company to reinvest those savings into the business securing jobs or improving services.

The battery storage facility will also provide economic benefit through the contribution to a consistent supply of electricity, which is vital for a successful business economy.

One of the key planning principles of PPW is to grow the economy "in a sustainable manner" and the proposed development will contribute towards this.

In addition to the above, the applicant is committed to providing Community Benefit Funds (CBF) for every project it develops. It is understood that CBFs are a matter separate to planning but that it is widely accepted that, in the event planning permission is granted for most renewable energy projects, that some form of CBF is often provided. The applicant will discuss the principles of that CBF with local stakeholders in due course. Typically, a CBF would be set up so it could be administered by the relevant Community Council and used to support local environmental projects.

4.9 Glint and Glare

Solar panels are designed to absorb sunlight, if they were highly reflective, they would be inefficient and would make a solar farm unviable. However, as they have a flat, polished surface, they will have a degree of reflectivity, commonly referred to as "glint and glare". "Glint" is considered to be a flash of light, i.e. a direct reflection of the sun whilst "Glare" is considered to be a continuous source of bright light i.e. a reflection of the bright sky.

At the pre-application stage, it was identified that a Glint and Glare Assessment would be required with the application, and this has been undertaken. The assessment has considered the impact upon residential dwellings within 1km of the site, upon drivers on the nearby roads and upon airfields within 30km of the site.

The report concluded that, with the mitigation proposed (i.e. new hedgerow and woodland planting) the effect of glint and glare on these receptors would not be significant. The proposed solar farm would not result in glint and glare that would result in a nuisance or a danger to highway or aviation safety.

4.10 Green Barrier

The site lies within a Green Barrier as defined by Policy EC1 of the adopted local plan, the "Wrexham East Green Barrier". Green Barriers (also referred to as Green Wedges) are a local designation and their purpose is to:

i) to prevent the coalescence of urban areas and villages with other settlements;
ii) to assist in safeguarding the countryside from encroachment;
iii) to protect the setting of urban areas and villages;
iv) to assist in urban regeneration by encouraging the recycling of derelict and other urban land.

The Green Barrier has not been designated on the basis of the quality of the landscape character or its appearance. The policy supports development in Green Barriers providing that it is for agriculture, forestry, essential facilities (e.g outdoor sport, recreation and cemeteries) and other uses which maintain the openness of the Green Barrier, and do not conflict with the purpose of its designation. It should be noted that the Wrexham East Green Barrier was designated in 2005, several years before the first solar farms appeared in Wales.

The PPW at paragraph 3.64 advises that "*The essential difference between [Green Belts and Green Wedges] is that land within a Green Belt should be protected for a longer period than the relevant current development plan period, whereas green wedge policies should be reviewed as part of the development plan review process*". Unlike the adopted local plan policy, PPW recognises renewable energy developments and at paragraph 3.77 advises that renewable and low carbon energy developments are certain forms of development which may be appropriate within a Green Wedge, provided that they preserve openness and do not conflict with the purpose of including land within it.

It is accepted that the introduction of a solar farm within the Green Barrier on previously undeveloped agricultural land will inevitably have some impact on the openness of the site. However, the maximum height of the majority of the infrastructure (i.e. the panels) at just over 3m

is relatively low. Areas of the site have been left undeveloped and the retention and enhancement of hedgerows will assist in assimilating the development into the landscape.

The development is temporary and reversible and when it ceases to operate, it will be dismantled, and the land restored for agricultural use.

The scale of the proposed solar farm and the associated landscaping will retain the open character of the site. Its location within part of the Green Barrier will not prevent the function of the wider Green Barrier in preventing the coalescence of settlements and to protect the setting of the settlement. Whilst it is in place, the solar farm would in fact prevent development pressure from other, more visually intrusive, forms of development in this location.

An additional purpose of the Green Barrier is to encourage the use of brownfield sites. While this is relevant for residential developments, in the case of solar farms the selection of a site is largely driven by the availability of a grid connection, or in this instance, the proximity to an identified end user. A review of the Site Register supporting the emerging Local Plan has identified that there are over 50 brownfield sites within and surrounding the city of Wrexham. However, many of these sites are too small to accommodate a solar farm. Furthermore, many of the sites have already been allocated or have planning permission for housing developments.

In respect of PPW and policy EC1, the proposed solar farm is considered to be acceptable.

Furthermore, in accordance with Government advice, the Green Barriers within the Borough have been reviewed as part of the evidence base for the emerging local plan[11]. It is proposed to amend the boundary of the Wrexham East Green Barrier to form a "Green Wedge", which, upon adoption of the local plan, would result in the removal of the site of the proposed solar farm from the Green Barrier/Wedge. This is due to the allocation of a Key Strategic Site (KSS2) at the western edge of Wrexham and the need to ensure a sufficient range of development land closely related to the urban edge. The removal of the Green Barrier designation does not remove the LPA's ability to control development within those rural areas which will be assessed against local and national planning policies.

4.11 Heritage-Listed Buildings

PPW sets out that the planning system must take into account the Government's objectives to protect, conserve, promote and enhance the historic environment. It is a finite, non-renewable and shared resource (paragraph 6.15). PPW provides guidance as to the setting of heritage assets, advising that there should be a general presumption in favour of the preservation, or enhancement of a listed building and its setting.

PPW is supported by Technical Advice Note 24 (The Historic Environment) which provides further advice on the setting of listed building. At paragraph 1.25, the setting is described as including the surroundings in which the asset is "*…understood, experienced, and appreciated embracing past and present relationships to the surrounding landscape*"

[11] Wrexham Strategic Green Wedge Review October 2017

Policy EC9 (Listed Buildings of Special Architectural or Historic Interest) requires developments within the curtilage of a listed building to respect the setting of that building.

Policy SP16 (Historic and Cultural Environment) of the emerging local plan advises that development will only be supported where it conserves protects and enhances historic abs cultural assets of the County Borough which includes listed buildings and their settings and archaeological remains.

The application has been accompanied by a Heritage Environment Desk Based Assessment (HEDBA) which has assessed the potential impact of the development upon heritage assets within the locality. In respect of listed buildings, there are three within 1km of the site which are:

- Pum-Rhyd: approximately 575m to the south-east of the site
- Llywyn Onn Hall Hotel: approximately 970m to the north-west of the site
- Ice House to NW of Llwyn Onn Hall Hotel: approximately 990m to the north-west of the site.

The historic relationship between the site and these buildings was considered along with any potential inter visibility. The proposed development would not be located within the curtilages of any of these buildings and the site does not have a historical functional relationship to them which is considered to contribute to their significance. Therefore, there would be no harmful impact upon the setting of these listed buildings.

The HEDBA also reviewed records relating to archaeological finds within the locality, and this will be discussed in more detail within the following section.

The proposed development is considered to accord with PPW, TAN 24, policy EC9 of the adopted plan and policy SP16 of the adopted local plan.

4.12 Heritage-Archaeology

PPW, at paragraph 6.1.23 advises that the conservation of archaeological remains and their setting, is a material consideration even if the remains are not a scheduled monument.

TAN 24 at paragraph 4.2 expands upon this and advises that when considering development proposals that affect scheduled monuments or other nationally important archaeological remains, there should be a presumption in favour of their physical preservation in situ. In cases involving less significant archaeological remains, LPAs will need to weigh the relative importance of the archaeological remains and their settings against other factors, including the need for the proposed development.

Policy EC11 (Archaeology) of the adopted local plan requires developments that directly affect non-scheduled sites to only be permitted if an archaeological investigation has been carried out. If in-situ preservation cannot be justified, a programme of excavation and recording must be agreed

Following the completion of the HEBDA, a gradiometer survey was undertaken. This identified areas of potential archaeological interest, including prehistoric ring ditches. A programme of trenching was agreed with the Clwd-Powys Archaeological Trust (CPAT) and at the time of drafting this report, the evaluation report is being reviewed by CPAT. The applicant will work with CPAT to ensure that adequate mitigation is provided to preserve the archaeological finds which could include mitigation measures such as the use of panels with concrete feet.

4.13 Highway safety

Policy SP12 (Transport and Accessibility) of the emerging local plan advises that developments that would have an unacceptable impact on the safe and efficient operation of the transport network will be restricted.

The proposed development would not result in a permanent impact upon the local highway network. The majority of vehicular movements associated with the development would be during the construction and decommissioning periods. There would be occasional visits to the site for management and maintenance purposes, but these visits, in a car or small van, would have a negligible impact upon the local highways network.

The application has been accompanied by a Construction Traffic Management Plan which has identified the level of vehicle movements associated with the development.

The proposed development would not compromise highway safety and it would have a negligible impact upon the local highway network.

4.14 Hydrology

PPW advises that development should be steered towards areas of low flood risk. Further, more prescriptive advice is contained within TAN 15 (Development, flooding and coastal erosion).

TAN15 was published in 2004, several years before the first planning applications for solar farms within Wales. It is therefore outdated in how such developments are considered in terms of flood risk. The revised version of TAN 15 was due to come into force in December 2021 but has been postponed until November 2023. Within the revised TAN, renewable energy was categorised as "less vulnerable development". This proposed amendment to TAN 15 reflected the appeal decision APP/G6935/A/16/3150137 in which the Inspector noted that TAN15 predates large solar farm developments. The Inspector stated that "*The proposed development would be unmanned with no occupants. The panels are inert and would not be a safety risk if the site did flood. The development could be easily disconnected from the grid and would not involve the use of toxic or hazardous substances. In addition, solar farms have a proven record of safe operation in flood zone locations and are compatible with them. Given its characteristics, it is thus appropriate to classify the proposed development as a 'Less Vulnerable' or 'Other' form of development. This would be consistent with the 'Less Vulnerable' classification of development such as general industrial and utilities infrastructure".*

Policy EC12 (Development and Flood Risk) of the adopted local plan requires that development within defined flood plains will only be permitted if it: a) would not be subject to an unacceptable risk of flooding on site and/or b) does not result in an unacceptable risk of flooding on or off site; and/or c) does not affect flood management or maintenance schemes.

Policy EC13 (Surface water run-off) of the adopted local plan does not support development which would result in an unacceptable adverse impact on the water environment due to additional surface water run-off.

Policy SP19 (Climate Change) of the emerging local plan requires developments to mitigate against the effects of climate change, which includes avoiding areas susceptible to flood risk and preventing development that increases flood risk.

The application has been accompanied by a Flood Consequence Assessment (FCA) and Surface Water Management Plan (SWMP).

The majority of the Northern Site lies within Flood Zone 1, the zone with the lowest risk of flooding as defined by Natural Resources Wales (NRW). A small area to the south and south-eastern boundaries of the Northern Site lies within Flood Zones 2 and 3, which have a higher risk of flooding. However, no electrical infrastructure is proposed within these areas. The location of the substation within the Southern Site, lies within Flood Zone 1.

The layout has been designed to keep all electrical infrastructure out of Flood Zones 2 and 3. In accordance with TAN15, the FCA includes a justification for the modest encroachment of the solar farm into the higher risk flood zones.

The FCA has also addressed the Justification Test as set out by TAN15

The SWMP has been informed by on site infiltration testing which has confirmed that the soils are freely draining across the site. The proposed solar farm will include some areas of impermeable surfaces associated with the battery storage, the sub-station and transformers. Surface water run-off will be captured by soakaways located adjacent to the aforementioned infrastructure.

The proposed solar farm will not increase the risk of flooding on or off the site. Surface water run off will be attenuated within the site.

The proposed solar farm accords with the objectives of PPW. TAN15 policies EC12 and 13 of the adopted local plan and policy SP16 of the emerging local plan.

4.15 Landscape Impact

PPW at paragraph 6.3.3 states that *"All the landscapes of Wales are valued for their intrinsic contribution to a sense of place, and local authorities should protect and enhance their special characteristics, whilst paying due regard to the social, economic, environmental and cultural benefits they provide, and to their role in creating valued places".*

Policy GDP1 of the adopted local plan requires that all new development should, amongst other criteria, ensure that its scale, design, layout, materials and landscaping, accords with the character of the site and makes a positive contribution to the appearance of the nearby locality.

Policy PS2 of the adopted local plan advises that developments *"must not materially detrimentally affect countryside landscape/townscape character, open space, or the quality of the natural environment".*

Policy SP15 (Natural Environment) of the emerging local plan will only support development that, protect, conserves and enhances the natural environment which includes natural landscape areas.

Policy RE2 (Renewable Energy Schemes) of the emerging local plan advises that in assessing applications for renewable energy installations, consideration will be given to the impacts of the development *on the landscape, the number, scale, size, design and siting of renewable installations and associated infrastructure, alone, cumulatively and in combination*

The application site does not lie within a nationally designated landscape. The Clwydian Range and Dee Valley Area of Outstanding Natural Beauty is approximately 8km to the west of the site.

The majority of the site lies within the Deeside and Wrexham National Landscape Character Area as defined by the National Landscape Character Areas for Wales.

A Landscape and Visual Impact Assessment (LVIA) has been submitted in support of the application. This has assessed the impact of the proposed development upon both the character and the appearance of the landscape from several public viewpoints within the vicinity.

The introduction of a solar farm within a rural landscape will inevitably have an effect upon the character and appearance of that landscape. The extent to which the effect will be harmful will depend upon a number of factors including the context of the site, the topography of the site, existing screening and proposed landscape mitigation.

The site is relatively flat in topography and while the landscape within the immediate vicinity of the site has a rural and agricultural character, the site is adjacent to the WIE, in close proximity to the outskirts of Wrexham and adjacent to Cefn Road.

A scheme of mitigation planting has been developed and incorporated to the proposals which, as it matures will screen the solar farm from Cefn Road and the dwellings to the south and west of the site, thereby reducing the visual impact upon the landscape. In respect of the impact upon the character of the landscape, the greatest impact will be at the immediate site level. Outside of the site and within the wider character area, the impact upon the character of the landscape will be much reduced.

Furthermore, the mitigation planting and management schemes will provide significant benefits in respect of landscape structure, habitat connectivity and biodiversity enhancement, which is likely to have a positive impact upon the landscape condition and the value of the local landscape character area.

Overall, it is considered that the limited resultant harm to the character and appearance of the landscape will be offset by the delivery of renewable energy, and it is considered that the proposed development accords with the environmental objective.

The proposed development is considered to accord advice contained within PPW, GDP1 and PS2.

4.16 Minerals and Waste

Under the adopted Local Plan, the site lies outside of the Protection of Mineral Resources as defined by policy MW9 (Protection of Mineral Resources). There is a known mineral resource further to the north- west, at the eastern boundary of Wrexham, which underlies part of the housing allocation (KSS2) within the emerging local plan.

The maps accompanying the emerging Local Plan do not fully cover the site, but it appears that parts of the site lie within extraction exclusion areas covering WIE and Wrexham Town.

Although the quantity, quality or value of any potential mineral resource at the site is currently not known, the key consideration is that the solar farm is not a permanent development. It will operate for a maximum of 40 years with no disturbance to the mineral resource. When the solar farm ceases to operate, all of the panels, batteries and supporting infrastructure will be removed from site and the mineral resource can be extracted, if it is determined that the resource is suitable for extraction.

Policy MW5 (Sustainable Waste Management) of the emerging Local Plan requires new developments to demonstrate how the production of waste will be minimized at all stages of the development.

During the construction process, there is expected to be minimal waste and any that does arise, will be taken off site and recycled where possible. Both the solar farm and the battery storage facility are largely modular in their construction, which means that should one element fail, such as an individual PV panel or battery cell, it can be replaced, maintaining the overall performance of the development. On-going management and maintenance will ensure that the development continues to run as efficiently as possible for its operational period.

The decommissioning of the site will be undertaken in accordance with the environmental legislation and technology available at that time. The scheme of decommissioning can be agreed with the LPA and secured by condition.

Many of the component parts of the solar farm and the battery storage facility can be dismantled, recycled, and re-used. This includes the battery cells and as the technology matures, it is expected that recycling or reconditioning processes will become more widespread and efficient.

5 Conclusion

The proposed solar farm has been designed with specialist advice in relation to a range of topics including ecology, hydrology, and landscape. Early engagement with the LPA resulted in further refinements to the proposed layout.

The site has been identified for, and is suitable for, the installation of a solar farm due to its location within a Local Search Area and the proximity of a defined end user of the electricity that will be generated.

The proposed solar farm would have significant public benefits through the decarbonisation of a public utility. The battery storage facility would maximise efficiency between the solar generation and the supply through the private wire and otherwise provide resilience to the grid.

It has been demonstrated that the proposed development will not result in an increased risk of flooding. The development has been designed to locate more sensitive infrastructure in areas of low flood risk and surface water can be attenuated within the site.

The solar farm will be inherently sustainable through the generation of renewable energy. Only a very small proportion of high grade agricultural land may be affected, however, no soils would be permanently lost from the site and an agricultural use, in the form of sheep grazing will be able to continue. Ecological enhancements can be incorporated and delivered within the site.

It has been demonstrated that the development would have a minimal impact upon the character and appearance of the landscape, would not result in harm to protected species or habitats and it would not be harmful to the amenities of those living near to the site. It would provide economic and environmental benefits.

Although not relevant to any future planning decision, the proposals create an opportunity to put in place a Community Benefit Fund with the potential to deploy funds to promote and support local projects and objectives across the project lifetime.

At a time when there is a climate emergency, an energy price crisis and as Wales looks towards a green recovery following the Covid-19 pandemic, it is of key importance that renewable energy developments are encouraged, promoted and delivered swiftly. The proposed development is considered to accord with the relevant national and local plan policies and should be approved without delay.

Appendix A: LPA Pre-application response

Wrexham County Borough Council / Cyngor Bwrdeistref Sirol Wrecsam
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Neuadd y Dref, Wrecsam. LL11 1AY
DX: 721924 - Wrexham 4
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wrexham
COUNTY BOROUGH COUNCIL
CYNGOR BWRDEISTREF SIROL
wrecsam

HELEN DONNELLY
CORYLUS PLANNING AND
ENVIRONMENTAL SERVICES LTD

Your Ref/Eich Cyf	
Our Ref/Ein Cyf	ENQ/2021 /0207
Date/Dyddiad	
Ask for/Gofynner am	Bryn Bolton
Direct Dial/Rhif Union	01978 298777
E-mail/E-bost	bryn.bolton@wrexham.gov.uk

Dear Sir/Madam,

Town and Country Planning Act 1990

SOLAR FARM AND BATTERY STORAGE
LAND ADJACENT TO LITTLE LLWYN ONN, CEFN ROAD, ABENBURY.

I refer to the enquiry for this proposal.

The main planning policies that would apply to the proposal are:

National Policy:

Planning Policy Wales 11 (2021)

Technical Advice Note 5: Nature Conservation and Planning

Technical Advice Note 6: Planning for Sustainable Rural Communities.

Technical Advice Note 12: Design

Technical Advice Note 15: Development flood risk

Technical Advice Note 18: Transport

Technical Advice Note 23: Economic Development

Development Plan policies:

Wrexham Unitary Development Plan (2005)

Strategic Polices

Rydym yn croesawu gohebiaeth yn Gymraeg.
Byddwn yn ymateb i unrhyw ohebiaeth yn Gymraeg ac ni fydd hyn yn arwain at unrhyw oedi.

We welcome correspondence in Welsh.
We will respond to any correspondence in Welsh and this will not lead to any delay.

Policy PS1 Strategic Policy
Policy PS2 Strategic Policy

Specific Policies

Policy GDP1 Development Objectives
Policy EC5 Special Landscape Areas
Policy EC6 Biodiversity Conservation

Together with the following adopted Local Planning Guidance Notes:

16 Parking
17 Trees and development
32 Biodiversity and development

Deposit Wrexham Local Development Plan

Policy SP7 – Green Wedge
Policy SP19 - Climate change
Policy RE2 – Renewable Energy Schemes

These documents are available from the Council's website:

https://www.wrexham.gov.uk/service/development-plans-and-other-planning-policy/wrexham-unitary-development-plan

https://www.wrexham.gov.uk/service/development-plans-and-other-planning-policy/local-planning-guidance-notes

https://wrexham-consult.objective.co.uk/portal/ldp/dldp/local_development_plan

Validation information:

Application forms

Site Location Plan

Block Plan – existing and proposed

Elevation and floor plans – existing and proposed

Ecology Report incorporating full details of any ecological mitigation

Tree report

Design and access statement

Glint and Glare Assessment

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Flood Consequence Assessment

Heritage Impact Assessment

Application fee.

http://old.wrexham.gov.uk/assets/pdfs/planning/info_sheets/validation_requirements.pdf

Other Considerations

Whilst not a validation requirement it is strongly recommended that the buildings proposed for conversion are subject to a full structural survey which is submitted with a planning application along with details to show the extent of any re-building/new build works.

Views of Officer

It is noted that the applicant has sought a response to specific questions relating to Best and Most Valuable land, the green barrier, clarification on the extent of the LSA and whether a glint and glare and noise impact assessments are necessary.

Principle of development

Planning Policy Wales 11 (PPW 11), is the most up to date national policy document. National policy is focussed on reducing energy demand, promoting renewable and low carbon development, and controlling extraction of carbon resources (coal mining, gas extraction, fracking). Paragraph 5 of PPW11 sets out this energy hierarchy:

Reduce demand, use energy efficiently, provide renewables, minimise carbon impact, minimise extraction of carbon intensive energy materials.

Best and most valuable land: From Welsh Governments' predictive agricultural land classification (ALC) land maps (Lle) the northern site is mainly grade 3b agricultural land, though a small fringe of the site is grade 3a (the ALC methodology uses 50m tiles, the corner of which lies within the site boundary). Only grades 1-3a are the best and most versatile agricultural land protected by national policy. According to WG guidance note (Nov 2017) additional survey work would not be required for grade 3b, given the very small amount of potential grade 3a (which is probably due to scaling issues with the methodology) and the fact the grade 3a land is on the edge of the areas identified for solar arrays and may not be developed anyway, I would not be inclined to ask for a survey. Site 2 is almost entirely grade 3a, WG guidance requires a survey to determine actual grading, however, given the site is small c. <0.12ha, does not appear to be in productive agricultural use and is effectively land locked by an adjacent solar farm and water treatment works and we may not request a survey.

Weight of policies in emerging LDP: As the enquiry notes, the LDP is currently in examination, consequently the relevant plan and policies for decision making is the UDP. However, as the end date of the adopted UDP has passed (2011), if there is more recent

national policy or evidence, this may be material. There have been several updates to PPW with changes to national policies for renewable energy, a requirement for LPA's to undertake a Renewable Energy Assessment and Ministerial Letters 15/3/2016 and 10/12/2015 on these matters. With this in mind any forthcoming application would need to provide justification within a planning statement in relation to other material considerations which should have weight in decision making.

LSA: The Solar Local Search Area boundary in the Renewable Energy Assessment (Sept 2019), identified in the enquiry letter as Figure 4, is the correct LSA boundary for solar. In our examination statement M15.01, we committed to updating the LDP proposal maps to reflect this. This, with other changes to the renewable energy policies and supporting text proposed in the statement and examination (Action Points M15.01AP), will be published in a Matters Arising Changes document, the MACs in due course will be consulted on as part of the examination process. It will be for the Inspectors to determine whether to accept these changes following consultation on the MACs.

Design and landscape impact

The proposal is located within a green barrier. PPW11 paragraph 3.77 states;
'Certain other forms of development may be appropriate in the Green Belt or green wedge provided they preserve its openness and do not conflict with the purposes of including land within it.
These are:
• *renewable and low carbon energy generation*

Therefore in accordance with national policy, in principle renewable and low energy generation could be appropriate in a green barrier, however the onus is on you to demonstrate the proposal would preserve the openness of the site and not conflict with the purposes of including land within the green barrier. I suggest the applicant addresses this with a Landscape Visual Impact Assessment utilising the relevant Landmap SPG, the Green Wedge review for the LDP (EBNB01) may also be a useful resource and methodology. Whilst given the topography of the land the site may not be visible from long distant views it is located directly adjacent to Cefn Road and Clywedog Road and this does raise some concern as the development would likely be clearly visible from these vantage points.

Neighbour amenity

In terms of neighbour amenity, due to the likely height of the proposed solar panels and their distance from neighbouring dwellings it's not envisaged that the development would result in loss of daylight/sunlight or increase in sense of enclosure, however there would be the potential for reflected light to prove a nuisance by reflecting into neighbouring amenity spaces and habitable rooms. It might therefore be beneficial that a glint and glare assessment is conducted to address these concerns.

Given the siting of the structures it does not appear that a noise impact assessment would be required in this particular case. However, a standard condition would likely be imposed requiring any noise generated to not exceed pre-existing background noise levels.

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Development of National Significance

The planning inspectorate have been consulted who state that the development would not constitute a DNS if the development is less than 10 mw of installed generating capacity or an extension for a standalone facility or an extension of an existing facility.

It is important to note that 'Installed generating capacity' means the maximum capacity of electricity generation (in megawatts) at which that generating station could be operated for a sustained period without damage being caused to it (assuming the source of energy used to generate electricity is available without interruption); people sometimes refer to their export to grid figure, but this is not the relevant criterion.

For a formal way of establishing whether something is a DNS project the onus is on you to undergo the Notification of Intention Submit a DNS process.

Parking and vehicular access.

Access: The proposed development site is located on Cefn Road which is a rural, classified road subject to a 40mph speed limit.

Based on typical speeds of 40mph any existing / proposed access would normally be required to provide visibility splays of 2.4 x 120m in both directions measured to the nearside edge of the adjoining highway. The required visibility appears achievable in the westerly direction. However, visibility in the easterly direction may not be achievable given the geometry of the road and existing hedgerow. It is recommend that you submit a suitably scaled layout plan indicating the full extent of the existing / proposed splays from this access.

The existing gated field access is served by a 3.6m wide dropped kerb and is gated 3.8m behind the edge of carriageway. The access is unsurfaced. Any proposed access would need to be improved / modified to provide suitable access for the maximum size / length of vehicle likely to visit the site eg/ 16.5m articulated HGV. Further details will be required to confirm the suitability of any proposed access including swept path details.

There is an existing 2m wide shared cycleway / footway along this section of Cefn Road which will need to be considered as part of any proposed development.

Typically such accesses will require widening, hard bound surfacing for a suitable distance behind the highway boundary, setting back of gates and means of intercepting private surface water run-off. This area of Cefn Road is typically prone to flooding.

Parking and Turning Provision: Any proposed development of this nature will require adequate parking and turning provision during the construction phase and beyond once operational. Further details / plans will be required to address the above issue.

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Traffic Generation: I would recommend that further details are provided in respect of the anticipated number of daily vehicle movements during the construction phase and once operational. The nature and size of anticipated vehicles will also be required.

Construction Traffic Management Plan: If the application is supported, a traffic management plan would be imposed by condition.

Ecology and trees

In accordance with policy EC6, to ensure that the development does not result in harm to local biodiversity, or to keep any damage to a minimum. The site is known to support great crested newt, the applicant will be required to operate under a NRW species derogation licence and provide an equivalent area of mitigation on site or adjacent. Any application should be accompanied by ecological surveys, mitigation plan and details on net biodiversity benefit.

Policy EC4 requires the conservation and management of trees and hedgerows. Development which results in the loss or significant damage to valuable trees and important hedgerows will not be permitted. It is noted that there are mature trees and established hedgerows that are within influencing distance of the development. We would require assurances that these trees and hedgerows would not be unacceptably impacted upon by the development. A tree report and survey would need to be submitted and an impact assessment conducted.

Flood risk and drainage

Policy EC12 that development within defined flood plains should not be subjected to unacceptable risk of flooding on site and does not result in unacceptable risk of flooding on or off site. TAN15 paragraph 6.2 states that highly vulnerable development in zone C2 should not be permitted. All other development will only be permitted if:

i. Its location in zone C is necessary to assist, or be part of, a local authority regeneration initiative or a local authority strategy required to sustain an existing settlement[1]; or,
ii Its location in zone C is necessary to contribute to key employment objectives supported by the local authority, and other key partners, to sustain an existing settlement or region;

and,

iii It concurs with the aims of PPW and meets the definition of previously developed land (PPW fig 2.1); and,
iv The potential consequences of a flooding event for the particular type of development have been considered, and in terms of the criteria contained in sections 5 and 7 and appendix 1 found to be acceptable.

Part of the site falls within flood zone C2 and as such a flood consequence assessment will be required to be submitted. Whilst power stations are categorised as highly vulnerable development it may be the case that the cells themselves are not considered to be highly vulnerable and this would only relate to the battery compound, inverter/transformer block,

substation etc. The proposal should comply with the above referenced points. I have consulted NRW and I am awaiting their response in relation to this matter. The council has not been made aware of when TAN15 will be updated.

Policy EC13 states that development which would result in an unacceptable adverse impact on water environment due to additional surface water run-off will not be permitted. Following the commencement of Schedule 3 of the Flood and Water Management Act, the works as proposed may require approval from the SuDS Approving Body (SAB) prior to commencement of those construction works. Further details of the SAB, the new national standards, the pre-application advice service and the application for approval process can be found on the Wrexham CBC's SAB webpage: https://www.wrexham.gov.uk/english/planning_portal/sab/sab.htm or by contacting the SAB Team directly at SAB@wrexham.gov.uk

Archaeology

With regard to archaeology you are advised to contact the Clwyd and Powys Archaeological Trust prior to submitting an application.

Conclusion

In the absence of supporting information the scope of this response is limited. From the information provided it would appear that the principle of installing solar panels within the green barrier in this location could be acceptable. However, it would need to be demonstrated through the submission of additional information that all other material planning considerations are dealt with satisfactorily. In particular there is a concern that given the site would be clearly visible from adjacent public vantage points that there is a concern in relation to landscape and visual impact. It would need to be demonstrated that proposal preserves the openness of the site. Supporting information would be required to be submitted to demonstrate acceptability in all other regards and you would be required to fully justify the proposals against national and local policy.

These comments are made without any prejudice to any formal decisions of the Local Planning Authority. Please also be advised that this response is based on the information available. It does not constitute a formal determination under the Town and Country Planning Act 1990. Any opinions contained in this response are those of the officer concerned and cannot be held as binding on the council or its members.

Yours faithfully,

Prif Swyddog Cynllunio a Rheoleiddio/Chief Officer Planning and Regulatory

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Planning

Landscape

Architecture

Hydrology

Ecology