



**Solar Park and Battery Storage Facility at
Land to the North of Maelor Gas Works, Marchwiel,
Wrexham, LL13 0UN**

Planning Statement

Novus Renewables Limited

REPORT REF: 258/PS

Date: May 2021.

The Old Dairy, Yanworth, Cheltenham, Gloucestershire. GL54 3LQ

01285 721 072

info@corylus-ltd.co.uk

www.corylus-ltd.co.uk

Document issue record

Version	Prepared by	Reviewed by	Issue to	Date
1	HD	JE	NRS	19.01.2021
2	HD	JE	Public Consultation	16.02.2021
3	HD	JE	WCBC	17.05.2021

Table of Contents

1	Introduction	1
2	Site location and context	2
3	Planning History	2
4	The Proposed Development	3
4.1	Solar Panels	3
4.2	Battery Storage	4
4.3	Construction, operational and decommissioning periods	5
4.4	Pre-application advice	5
5	Planning Policy and Legislation	6
5.1	Moving towards a Net Zero Future	6
5.2	Planning Policy	8
5.3	Site Selection	9
5.4	Principle of Solar Panel Park and Battery Storage	10
5.5	Agricultural Land Classification	11
5.6	Biodiversity, Trees and Green Infrastructure	11
5.7	Contaminated Land, Noise and Air Pollution	12
5.8	Economic Benefit	14
5.9	Highway safety	14
5.10	Hydrology	15
5.11	Landscape Impact	16
6	Conclusion	17

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 park with a battery storage facility along with associated infrastructure at land to the North of Maelor Gas Works, Marchwiel, Wrexham, LL13 0UN, 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.

Report type	Report Author	Reference number	Rev/Version
Arboricultural Report	Corylus Planning and Environmental Limited	February 2021	1
Construction Traffic Management Plan	Acstro	February 2021	3
Baseline Flood Model Report	Corylus Planning and Environmental Limited	258/Flood	2
Design and Access Statement	Corylus Planning and Environmental Limited	258/DAS	2
Flood Consequence Assessment	Corylus Planning and Environmental Limited	258/FVC	2
Great Crested New Mitigation Plan	Corylus Planning and Environmental Limited	258_GCN_CMP	2
HRA Screening	Corylus Planning and Environmental Limited	HRA-258	2
Landscape and Visual Appraisal	Corylus Planning and Environmental Limited	258/LVA	1
Pre-application consultation report	Corylus Planning and Environmental Limited	258/PCR	2
Preliminary Ecological Assessment	Corylus Planning and Environmental Limited	258/PEA	2
Planning Statement	Corylus Planning and Environmental Limited	258/PS	3
Surface Water Management Plan	Corylus Planning and Environmental Limited	258/SP12	3

Table 1: Summary of technical reports accompanying the application

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 relevant material considerations.

2 Site location and context

The application site is located to the east of Wrexham, to the south of the Wrexham Industrial Estate (WIE) and to the north of the former Maelor gas works.

The site measures approximately 9.3 ha in area and comprises agricultural land. It is located between an existing solar park and the River Clywedog. The site comprises four parcels of land, referred to as Fields 1A, 1B, 1C and 2.

The site is accessed from a road, known as Tetra Pak Road which is a no-through road, connecting to Bedwell Road to the west. Tetra Pak Road serves the large Mainetti factory, the existing solar park (Wrexham Solar Park) and provides access to the surrounding agricultural land.

The site does not lie within a designated landscape. The topography is gently undulating. There is a Public Right of Way (PRoW) to the east of the site which partly runs below an overhead power line. Beyond the PRoW, and approximately 200m from the eastern boundary of the site lies another solar park (Pickhill Solar Park).

Within the site, there are several brick buildings associated with the Wrexham Ordnance Factory which operated in the locality during the Second World War. Some of the access tracks within the site and wider area are associated with this ordnance factory.

There are a number of mature trees within and adjacent to the site. It is understood that none of these trees are protected.

Part of the application site lies within Flood Zone C2, the zone defined by Natural Resource Wales (NRW) as being having a high risk of flooding. This will be discussed in more detail in section 6.8 and within the accompanying Flood Consequence Assessment (FCA).

The Predictive Agricultural Land Classification maps show that the site is a mixture of Grade 3a and Grade 3b land.

3 Planning History

Wrexham Solar Park, the existing solar park located adjacent to the application site, was granted planning permission in December 2015 (LPA reference SES P/2015/0463) and was subject to a Section 73 planning application in 2019 (SES P/2019/0440).

Although adjacent to each other, it is important to note that the two solar parks will be within different ownerships and will be operated independently of each other, with the existing solar park remaining in operation under subsidies.

It is also important to note that, although the description of development planning permission SES P/2015/0463 refers to 5MWp, Wrexham Solar Park as built has an export capacity of 4.27MWp.

4 The Proposed Development

There are two distinct elements to the proposed development:

1. Solar photovoltaic panels and associated infrastructure
2. A battery storage facility.

4.1 Solar Panels

4.1.1 The Technology

Solar parks generate electricity from sunlight using photovoltaic (PV) 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 sunlight as possible. Although the reference is to “sunlight”, the panels actually absorb daylight (i.e visible light) so will continue to generate electricity, even on a cloudy day.

Electricity 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 park. From these, the electricity flows through underground cabling to a client 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, such as manufacturing facilities.

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

4.1.2 The Proposed Solar Park

As discussed within section 3, the proposed solar park, although adjacent to an existing solar park, will be operated separately from it. For the purposes of the consideration of the application, it is not considered to be an “extension”.

The proposed solar park will have a maximum export capacity of 5.7MWp. The battery storage facility will have an import/export capacity of 16MWh. Energy storage developments up to 350MW are not considered to be “Developments of National Significance”. Therefore, it is considered appropriate that the development proposed is determined by the LPA.

The proposed PV panels will be very similar in size and appearance to what has been installed within the existing solar park but will each PV panel have an increased generation capacity of 560-580kW.

The panels will be mounted on frames with a maximum height of 3.1m supported by a single stanchion. They will be arranged in rows facing south to maximize energy generating potential.

The layout includes the following necessary associated infrastructure to support energy generation:

- Inverters
- Transformers
- Sub-station
- Fencing and gates
- Access Tracks
- CCTV

The layout has been designed to retain the second world war brick buildings, trees and hedgerows, along with additional planting and enhancements for biodiversity.

4.2 Battery Storage

4.2.1 *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 park) 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 the 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.

Battery storage is relatively simple to install as the containers themselves are delivered ready assembled onto site.

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 vastly improved 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.

Battery as a grid connected storage is therefore competitive and widely available. Relative to their size, they 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.

4.2.2 The Proposed Battery Storage Facility

The battery storage area will be located within field parcel 1A and will comprise:

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

Battery storage is proposed within the application due to the availability to the applicant of additional capacity within the grid connection and the battery storage would therefore maximise the efficiency of the proposed PV installation.

4.3 Construction, operational and decommissioning periods

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

Once operational, the solar park, including the battery storage facility, will require 1-2 visits per month for maintenance.

The operational period of the solar park 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 requirement for the submission of a decommissioning statement following the permanent cessation of electricity generation can be secured by condition.

4.4 Pre-application advice

Pre-application advice was sought from the LPA in December 2019 (LPA reference ENQ/2019/0293). Based upon the advice received, the battery storage facility was relocated. It was noted that the proposed development as a whole would be unlikely to have an impact upon the wider landscape and to minimise landscape impact, trees and hedgerows should be retained where possible with additional planting. The layout of the development has been designed accordingly.

5 Planning Policy and Legislation

5.1 Moving towards a Net Zero Future

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”¹ it requires... *“immediate action across all key technologies and policy areas and full engagement across society and end consumers”*. This will include 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”² 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 Plan³. 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 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,⁴ including what was described as an “ambitious target” to reduce all

¹ Future Energy Scenarios. National Grid.ESO. July 2020

² Energy Wales: A Low Carbon Transition. Welsh Government. March 2012

³ Energy Wales: A Low Carbon Transition Delivery Plan. Welsh Government. March 2014.

⁴ The path to Net Zero and progress on reducing emissions in Wales; Climate Change Commission. December 2020

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.

“Prosperity for all: A low carbon Wales”⁵ 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%.

In April 2019, the Environment Minister (and the Welsh Assembly Member for Wrexham) Lesley Griffiths declared a “Climate Emergency”. Wrexham Borough Council also declared a Climate Emergency a few months later in September 2019.

The Covid-19 pandemic has generated calls for a “green recovery” and in June 2020, the Climate Coalition⁶ (which includes the Stop Climate Chaos Cymru organisation) wrote to the UK Prime Minister 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 leveraging 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. 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.

⁵ Prosperity for All: A Low Carbon Wales. Welsh Government. March 2019

⁶ <https://www.theclimatecoalition.org/greenrecovery>

5.2 Planning Policy

5.2.1 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 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)
- Strategic Policy PS11 (Biodiversity)
- Strategic Policy PS12 (Renewable Energy)
- Policy GDP1 (Development Objectives)
- Policy EC2 (Agricultural Land)
- Policy EC4 (Hedgerows, Trees and Woodland)
- Policy EC6 (Biodiversity Conservation)
- 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 awaiting confirmation from the Planning Inspectors regarding the next stages of the Local Plan process and if further public consultation will be required. 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. Those policies are:

- Objective SO10 of the emerging local plan 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 the support of the use of renewable energy resources and low carbon technology
- Policy RE2 (Renewable Energy Schemes) supports the generation of energy from renewable and low carbon sources
- Policy SP15 (Natural Environment) is also relevant. Development will only be supported where it protects, conserves and enhances the natural environment including protected species and their habitats
- Policy SP17 (Sand and Gravel Safeguarding Area)
- Policy SP19 (Climate Change) of the emerging local plan requires developments to mitigate against the effects of climate change by taking into account a reduction in carbon emissions and the promotion of increasing the supply of renewable energy
- 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 MW1: (Minerals Safeguarding)
- Policy MW2: (Minerals Buffer Zone)
- Policy MW3: (Sustainable Supply of Minerals)

The policies are material considerations, but due to the status of the Local Plan, they cannot be afforded significant weight.

5.2.2 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, 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 policy is supplemented by technical advice notes (TAN), circulars and policy clarification letters. 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 8: Renewable Energy (2005)
- TAN 11: Noise (1997)
- TAN 15: Development and Flood Risk (2009)

5.2.3 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 meet the country’s international commitments and the target to generate 70% of consumed electricity in Wales by renewable means by 2030.

5.3 Site Selection

At both a national and local level, areas for the delivery of renewable energy developments have been identified to inform the drafting of relevant planning policies.

The evidence base for the emerging Local Plan has identified Areas of Search (AoS) for renewable energy, including solar. For Wrexham, an AoS has been identified to the north-east of Wrexham Industrial Estate (WIE), adjacent to the proposed 28ha allocation to extend the industrial estate, with the aspiration that the proximity would enable the AoS to be an “energy centre” for the WIE extension.

While these search areas have been identified in respect of landscape impact, they often do not take into account whether a development in such a location would be able to feasibly access a Point of Connection to the grid and the extent (if any) of additional capacity within the local distribution network to export electricity.

The applicant has not pursued development in either a national or locally identified search area as the applicant has secured the use of the existing PoC and there is capacity available for the development to export electricity. The applicant has also identified that there is little Grid capacity available within the AoS to the north-east of WIE. The presence of a PoC which is available is therefore a significant factor in the siting of the proposed development; where there is capacity within a grid connection, this should be utilised to maximize the delivery of renewable electricity and the drive towards a zero carbon future.

It is known from the existing solar pv parks that irradiation levels within the locality are reasonably good and are at a level by which a solar park development can be viable.

5.4 Principle of Solar Panel Park 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”*.

5.5 Agricultural Land Classification

Within PPW at paragraph 3.5.9, it is advised that high 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 states that development on best and most versatile agricultural land (i.e 1,2 and 3a) will only be permitted if it does not lead to the irreversible loss of that land.

While the purpose of the aforementioned policies seek to direct development away from higher grade agricultural land, for solar parks and energy storage developments, the proximity to an available grid connection is a key determining factor in finding a suitable location.

The site and surrounding land has been identified at a high level by NRW as comprising high grade agricultural land which can produce moderate to high yields of various crops. However, it has, for several years, been used solely for the grazing of sheep. The proposed development would not result in the wholesale loss of high-grade land, the panels and infrastructure will be removed at the end of the operational period and the land restored. Furthermore, the layout and nature of the development means that sheep grazing can still occur, as has been demonstrated at the existing solar park.

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

5.6 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.

The site does not lie within a nationally designated site; the nearest are the River Dee Site of Special Scientific Interest (SSSI) and the River Dee and Bala Lake Special Area of Conservation (SAC), both of which are approximately 1.6km to the east. There are a number of non-statutory designations within 2km of the application site including 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 a Preliminary Ecological Assessment. This assessment identified that the site is improved grassland sward and has the potential to support a range of species including bats, breeding and wintering birds and reptiles. Great Crested Newts were also considered to be highly likely, given the proximity of the site to Wrexham Industrial Estate.

The proposed layout includes a variety of ecological mitigation and enhancement measures, including the creation of a pond, the retention and enhancement of existing hedgerows and the planting of nectar rich grassland species. The proposed development will not include any external lighting and therefore any potential bat roosts will not be affected.

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.

The applicant is aware that a Protected Species License will be required from NRW in relation to the GCNs. The applicant is also aware that Himalayan Balsam is an invasive species that will need to be managed.

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

5.7 Contaminated Land, 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... and ...not subject to contamination”*.

The site is located on land which was formerly part of the Wrexham Ordnance Factory. It is known from other planning applications within this area, including the adjacent solar park, that the land has the potential to be contaminated.

Prior to the submission of the application, advice was sought from the LPA’s Contaminated Land Officer regarding the need for a Phase 1 desk-based study. The advice received was that contaminated land is dealt with by a pre-commencement condition for a site investigation.

The applicant is aware of the potential for Unexploded Ordnance and a survey will be commissioned prior to the commencement of development.

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 proposed development includes decentralised or string inverters that would be distributed throughout the solar park and sit underneath the tables of pv panels. These can be air cooled, but can be fan cooled and if operating at maximum activity audible noise at a distance of 1m is c50-55db .This sound dissipates quickly and would be inaudible from the boundary of the solar park.

The battery storage facility would have its own inverters, which are located between the battery containers, sited in weatherproof cabinets and are the source of the highest noise emissions on the facility, and with such noise being generated by fans required for cooling. Data from one of the leading manufacturers of these systems has measured worse case noise emissions of 75dB at 1m.

In addition, to regulate conditions, containers have a heating, ventilation & air conditioning design component (HVAC). The HVAC will run depending on ambient conditions and in response to the operation of the battery units. Noise emissions are c60-70dB at 1m depending on supplier but will likely be lower than the inverters noted above.

There are noise receptors in close proximity to the site. The nearest residential dwelling is approximately 270m to the south-east of the battery storage facility. The Public Right of Way

(SES/25) is approximately 150m to the west. Noise generated within the battery storage facility will dissipate over a relatively short distance and, in context of the site, would not result in an unacceptable level of noise disturbance. The LPA can condition noise limits at the site boundary if required.

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

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

5.8 Economic Benefit

One of the key planning principles of PPW is to grow the economy “in a sustainable manner”.

The economic benefits of the proposed development have previously been discussed within this statement. In summary, they arise from both the construction/operation of the site and the potential energy generation/storage.

The proposed development would result in short term economic benefits during the construction period, both directly through employment, and indirectly through the use of local supply chains, services etc.

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.

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

Further economic benefits could be realised from the connection of the solar park to a local business within the WIE through a private wire.

The proposed development is considered to accord with PPW.

5.9 Highway safety

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 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.

5.10 Hydrology

PPW advises that development should be steered towards areas of low flood risk. Further, more prescriptive advice is contained within TAN 15: Development and Flood Risk. Development that is proposed within a high-risk area of flooding, will require justification.

Policy EC12 (Development and Flood Risk) of the adopted local plan requires that development with 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) does not support development which would result in an unacceptable adverse impact on the water environment due to additional surface water run-off.

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

The FCA identifies that while part of the site lies within a zone with a low risk of flooding, part of it (fields 1A and 2) are within Zone C2. This zone is identified by TAN 15 as the zone with the highest risk of flooding and does not benefit from significant flood defence infrastructure. TAN 15 does not specifically reference renewable energy projects within the categorisation of development, and such developments are considered within “Highly vulnerable developments”

TAN15 was published in 2004, several years before the first planning applications for solar parks within Wales. It is therefore outdated in how such developments are considered in terms of flood risk. It is of relevance that the Welsh Government has recently consulted on updates to TAN15 (October 2019-January 2020). Within the consultation paper, renewable energy has been added to the guidance as “less vulnerable development”. It is expected that the revised TAN will be adopted in early 2021.

The amendment to the categorization of the vulnerability of solar parks reflects 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”*.

The FCA includes the results of hydraulic modelling of the River Clywedog. The extent of flood levels is understood and the development has been designed to locate infrastructure, other than panels and cables, within the zone of lowest flood risk. The minimum height of the panels at 0.8m above ground level will be above modelled flood levels.

The FCA demonstrates that the proposed development would not increase flood risk to third parties and surface water can be mitigated for with attenuation provided within the site.

The FCA has also addressed the Justification Test as set out by TAN15. As previously discussed, TAN15 predates the emergence of solar parks (and battery storage) developments and the majority of questions set out within the justification test do not reflect the nature of such developments.

It is acknowledged that part of the site lies within a zone subject to a high risk of flooding. However, it has been demonstrated that the development can be constructed to avoid modelled flood levels and would not result in an increased risk of flooding off-site.

The proximity of a PoC is a key consideration for the siting of a solar park. While there may be sites in areas with a lower risk of flooding, without an available connection point to the grid, those sites would be unsuitable. The proposed development will make full use of the grid capacity available and would make the relatively modest scale solar park, viable.

The proposed development would not result in any occupants or employees being on site for considerable periods of time, or overnight. Only minimal attendance on site will be required for management and maintenance.

The overriding benefits of the proposed development in generating renewable energy, providing resilience to National Grid and making a contribution towards the reduction in carbon emissions are significant material considerations.

The advice contained within TAN15 regarding flood risk, does not take into account overall permeability of a solar park and the ability for it to operate without the need for any employees to be present at the site. The forthcoming revisions to TAN15 will classify renewable energy developments as less vulnerable. This is a sensible and welcomed move, and one which it is hoped LPA Officers will recognise when considering the application.

5.11 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”*.

The application site does not lie within a nationally designated landscape. The Clwydian Range and Dee Valley Area of Outstanding Natural Beauty is approximately 10km 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 (NRW, 2013). A small part towards the south-eastern boundary is located within the Maelor National Landscape Character Area.

The eastern boundary of the site is adjacent to the boundary of the Ceiriog Valley Special Landscape Area as defined by Policy EC5 of the adopted Local Plan. The boundary of the SLA has been reviewed as part of the emerging local plan, and a new SLA the Lower Dee Flood Plain, is proposed further to the east of the application site.

There are a number of PROWs in the vicinity of the site and the Landscape and Visual Assessment (LVA) that accompanies the application has assessed the impact of the proposed development from these PROWs along with other potential viewpoints (visual receptors).

The LVA has concluded that the proposed development would have a minor adverse impact upon the landscape but will have a very limited adverse impact upon the visual receptors. By their nature solar parks, and battery storage facilities will have an impact on the character of an agricultural landscape. However, the retention of hedges and trees provide screening and help to assimilate the development into the surrounding landscape. Furthermore, the proposed change is not permanent as the development will have an operational period of 40 years.

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

6 Conclusion

The proposed solar park would have significant public benefits through the generation of renewable energy, thereby making a contribution towards a reduction in the reliance of fossil fuels and carbon emissions. The battery storage facility would provide resilience to the National Grid, dealing with the discrepancies between renewable energy generation and peak times of demand.

It has been demonstrated through comprehensive and detailed modelling regarding flood risk, that despite the location of the site within a high-risk flood zone, 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, the pv panels can be mounted above modelled flood levels and constructed in a way that will not result in increased flood risk off-site, and surface water can be attenuated within the site.

It has been demonstrated that the development would not be harmful; it 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.

At a time when there is a climate emergency, 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.



Planning

Landscape

Architecture

Hydrology

Ecology