



HyBont Green Hydrogen Project

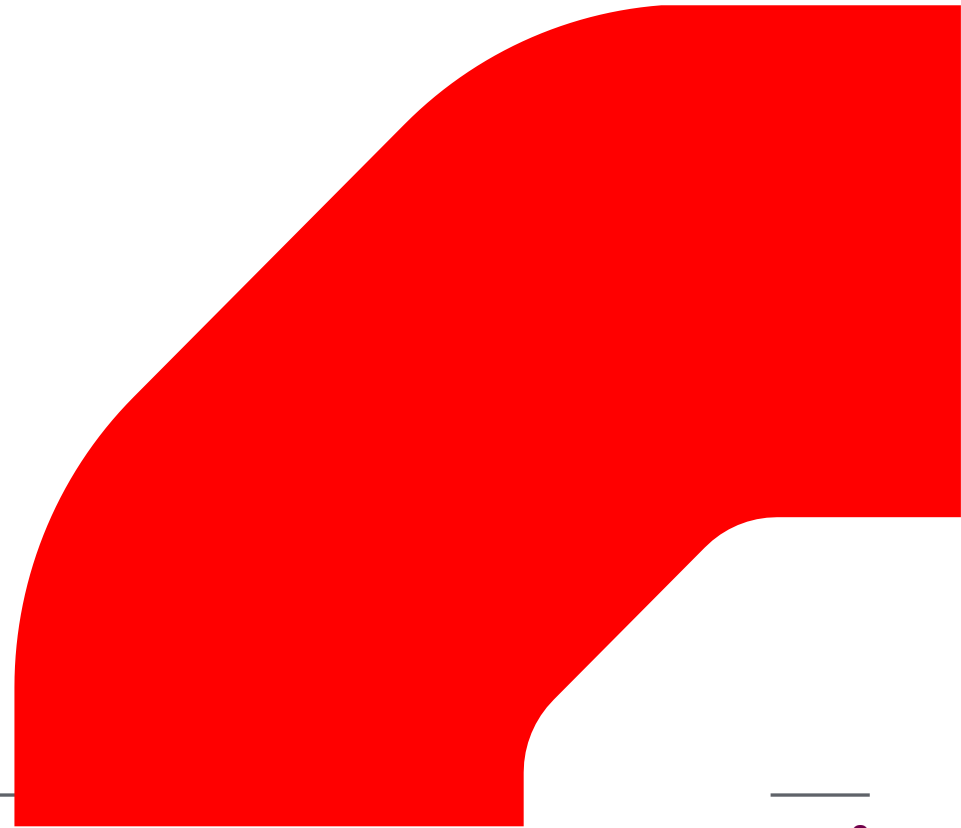
Planning, Design & Access Statement

November 2022

Marubeni
Europower

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Introduction



Introduction

Marubeni Europower (the applicant) is seeking full planning permission for the following proposal:

Development of a green hydrogen production facility with electrolysers, hydrogen storage, hydrogen refuelling station, admin building, substation, back-up generator and hydrogen pipeline 'off-take'; with access, circulation, parking, lighting, security fencing, hard and soft landscaping, and drainage infrastructure on land at Brynmenyn, Bridgend. Together with the installation of a solar photovoltaic electricity generating station (solar farm), comprising ground-mounted solar panels, inverters, transformer units, control and storage building, switch gear and a substation; with access, circulation, parking, lighting, security fencing, hard and soft landscaping, drainage infrastructure and temporary construction compound, on land at Bryncethin, Bridgend. Sites to be connected via an electrical wire (part under and part overground)

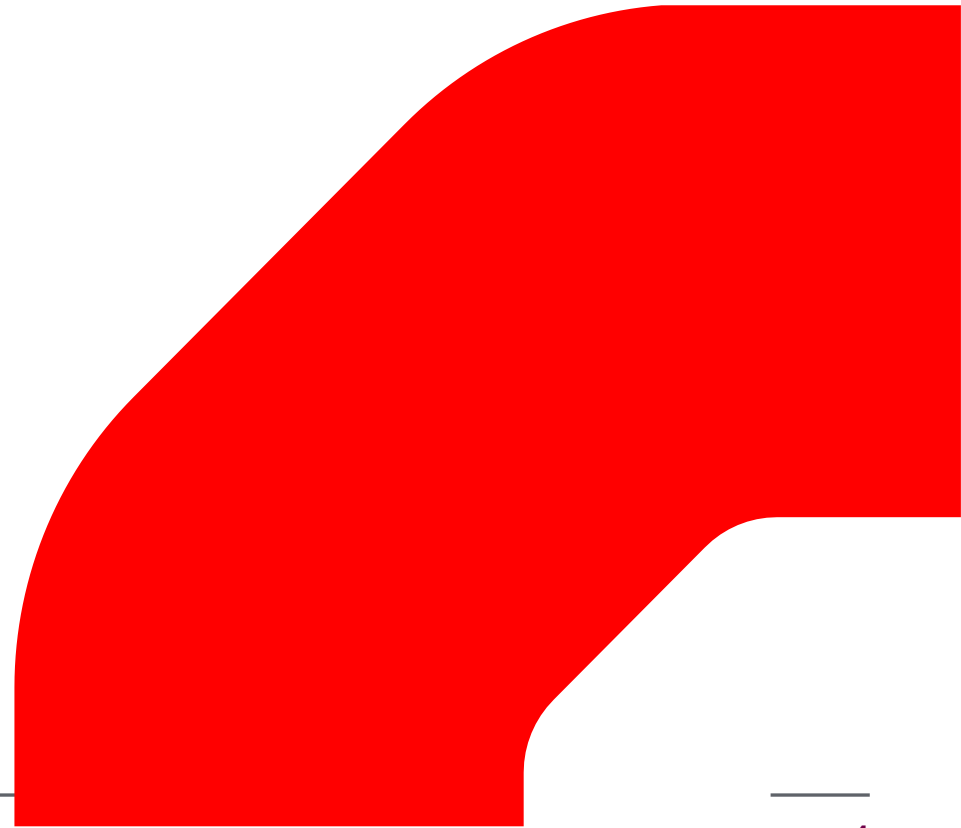
The proposal has been named as the *HyBont Green Hydrogen Project*.

Formal pre-application written advice under reference PE/192/2022 was received on 26th August 2022, following a pre-application meeting with relevant officers on 16th August 2022.

The scheme has also been screened for Environmental Impact Assessment and an EIA Screening Opinion under reference P/22/572/SOR confirming that the proposal is not EIA development was received from BCBC on 15th September 2022. Copies of both are included as Appendices to this statement.

The application is supported by a number of technical reports and rather than repeat the details here, this statement should be read in conjunction with them. This statement pulls through conclusions from them in arriving at a planning balance, but does not contain the technical detail.

The sites



Scheme spatial context



Brynmenyn Site Context

The Brynmenyn site has been cleared for development and is allocated for employment development.

The Predictive Agricultural Land Classification Map for Wales classifies the Brynmenyn site as 'urban'. As such, the site is not best and most versatile agricultural land.

The site is not crossed by a Public Right of Way (PRoW) but footpath 10 (Garw Valley) is located to the south and runs between the industrial estate boundary and residential area of Bryncoch. A shared use footpath/cycle track (Active Travel Route BRC3/ NCN 4 Celtic Trail) runs north of the site along the River Ogmore. The majority of the route forms part of National Cycle Network 4 and links Blackmill to Brynmenyn and the local Comprehensive School.

The site is within Flood Zone A, considered to be at little or no risk of fluvial or coastal/tidal flooding as designated in the Development Advice Maps within Technical Advice Note 15. The industrial estate to the north is partially within Flood Zone C2/B. A revised TAN15 is due to be published in June 2023, supported by the new Flood Map for Planning. On the proposed new flood map, the site is not identified as being at risk of flooding. Roads around it are identified as being at risk of surface water flooding (Zone 3) as is a small linear area to the immediate northeast of the site between the Industrial

Estate and the greenfield land. The hydrogen pipeline to Coleg Cymunedol Y Dderwen, will pass through the C2 flood zone.

The site is part of the Tyn y Coed Farm SINC, albeit site clearance means that areas have been readied for development.

There is Himalayan Balsam, an invasive species, over a large part of the site.

There are tree preservation orders on the wider site, but beyond the extent of the application site.

There are no conservation/heritage designations affected by the proposal. The closest designated asset is the residential property Maendy a Grade II* Listed Building. The farmhouse is located to the south of the site at the end of Leyshon Way. It is considered that because the proposal is located in the north of the development area and it and the wider site are allocated for development that any impact on setting has already been considered in principle.

The site is not within a high risk coal mining zone and it is not subject to minerals safeguarding.

Brynmenyn site context



Bryncethin Site Context

The Bryncethin site is previously worked and now restored open grazing land. The Predictive Agricultural Land Classification Map for Wales classifies the site as being of very poor grade (Grade 5). As such, it is not best and most versatile agricultural land.

The site is allocated for events/tourism/recreation use. A Public Right of Way crosses the southern boundary of the site (PROW 12 St Brides Minor), but will not be impacted by the proposal.

The site is adjacent to the Pant Farm/Hirwaun Common SINC – in the south east. The proposal is avoiding that area of land.

There is Himalayan Balsam, an invasive species, present across the site.

There are no conservation/heritage designations affected by the proposal.

There are no tree preservation orders on the site.

Based on the Development Advice Maps, part of the site is at risk of river and/or surface water flooding. It is located in the C2 zone, described as areas of the floodplain without significant flood defence infrastructure. Only less

vulnerable development should be considered, which as an infrastructure proposal, this project is.

Part of the site is classified as being a high risk coal mining zone and it is in a minerals safeguarding area. Being a solar array, it is a minimally intrusive form of infrastructure in terms of ground engineering, as well as being a reversible form of development.

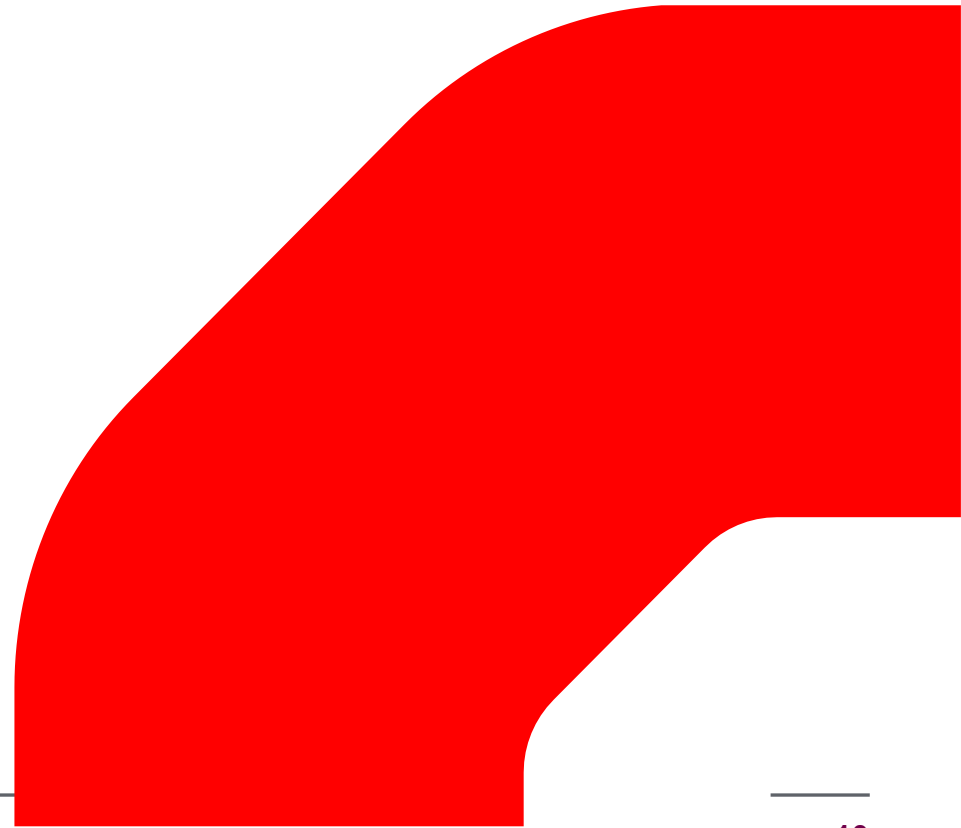
An area of common land is located on the southern and eastern edges of the site, part of the Cefn Hirgoed and Hirwaun Common. These areas are outside of the development extent of the proposal.

National Grid high voltage overhead lines cross the site on its north and east sides.

Bryncethin site context



The proposal



The Hydrogen Production Facility

The proposed project at Brynmenyn, Industrial Estate comprises a hydrogen production facility with electrolyzers that generate hydrogen from electrical power by splitting water, hydrogen storage, and a hydrogen refuelling station. The site is owned by BCBC and is currently cleared land allocated for employment uses in the Bridgend LDP. The hydrogen production facility site will be approximately 1 hectare in size, of which a large proportion will be used for roads and paving to allow adequate access for re-fuelling of heavy vehicles including an outer perimeter road, and the remainder for an 'island' of hydrogen production, storage, and re-fuelling equipment.

The proposed hydrogen production facility would have a rated capacity of up to 6 MW HHV of electrolysis, consisting of two electrolyser units, and up to 5 tonnes of hydrogen storage. The hydrogen supply of 443 tonnes per year would be expected to indicatively fuel 5 of BCBC's Refuse Collection Vehicles, 6 HGVs, up to 30 local and regional buses, and the Ynysawdre Cluster's heating demands, along with local industrial heating.

The facility is intended to operate within a compound with controlled access. The components include the electrolyser, compression, and re-fuelling station units which are intended to

be 'modularised' in typically ISO containers, with hydrogen storage as above-ground cylindrical tanks, and electrical equipment housed in a substation. A small administration building will facilitate the monitoring and control of site operations. The majority of equipment and buildings would be expected to be less than 4m in height, with the tallest structure e.g. atmospheric vents typically being less than 10m in height.

Electrical power shall be provided at 11kV AC 50 Hz 3-phase from a distribution network operator (DNO) supply and a solar generation supply at the HV substation. This supply shall include the capability to source power from grid (including renewable wind generation) and solar generation through a directly connected Solar PV Array at Bryncethin via two options for a circa 1.5 km private wire connection (part over and part underground).

The emergency power supplies are yet to be defined but are anticipated to either be fuel cells, or batteries to enable safe shutdown of the facility. Provision for connection of a LV back-up generator will be made on the main LV switchboard, to provide the full auxiliary power load in the event of a site shutdown.

The Hydrogen Production Facility

An uninterruptible power supply (UPS) system will be provided to back-up the site control and emergency systems.

Hydrogen is intended to be supplied for transport users (Refuse collection vehicles, buses and light vehicles) at the Brynmenyn site refuelling station dispensers and for heat users at the Ynysawdre Cluster (college, primary school, and leisure centre) through a circa 1.2km hydrogen pipeline.

The hydrogen pipeline is expected to use the same construction as for natural gas pipelines i.e. approx. 90mm polyethylene plastic piping in a trench, operating at medium pressure (below 2 bar).

Access: The site benefits from good access from the adjacent Industrial Estate and will be accessed from the site boundary, via a new connection to Squire Drive, an adopted highway.

Hydrogen Pipeline

The proposed hydrogen production facility will be linked via pipeline to off-site locations at the 'Ynysawdre Cluster' which contains the following:

- Ysgol Gynradd Brynmenyn Primary School
- Coleg Cymunedol Y Dderwen
- Halo Ynysawdre Swimming Pool and Fitness Centre

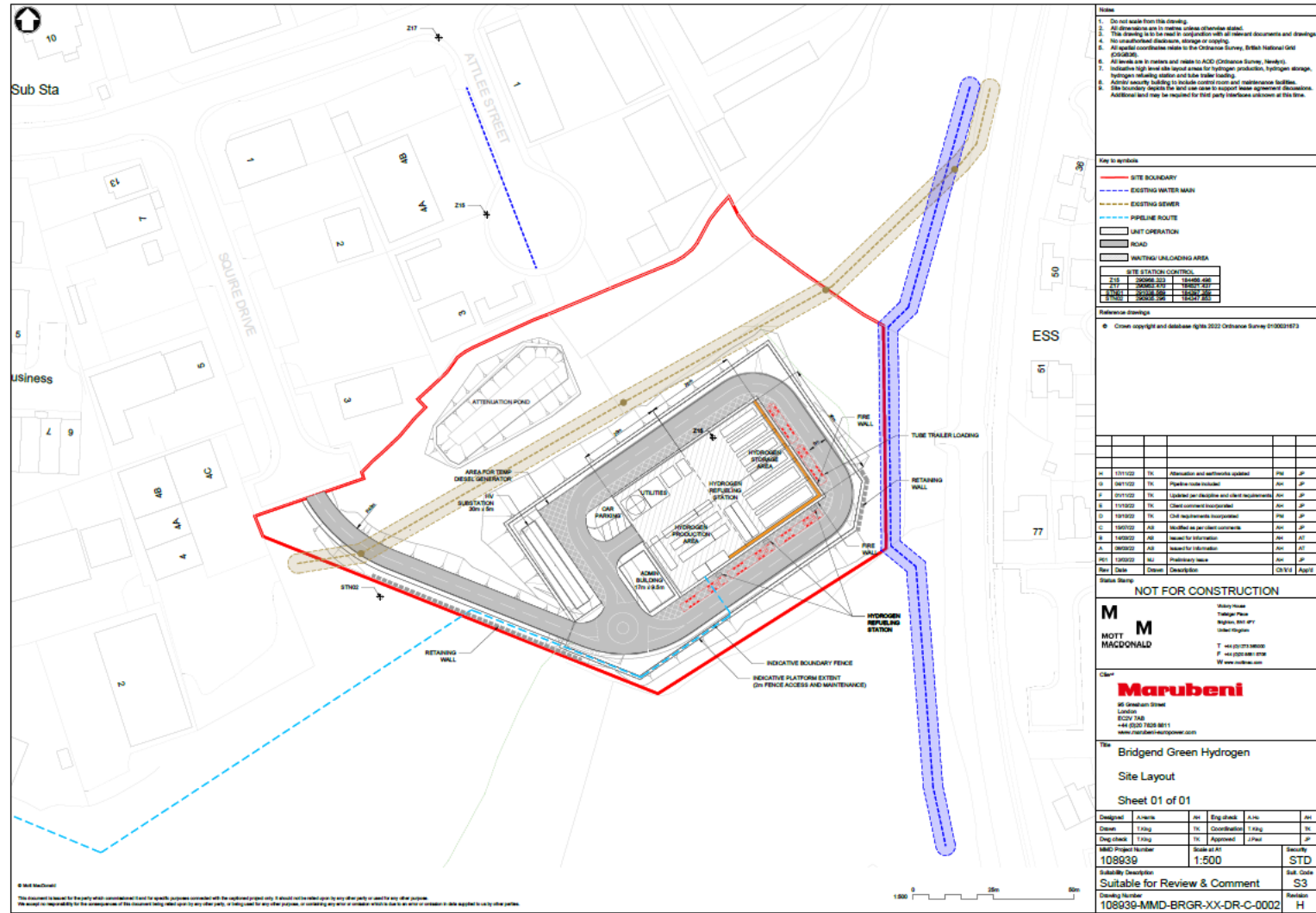
The proposal is for an underground hydrogen pipeline (circa 1.2km in length, 100mm diameter) from the hydrogen production facility to serve the above local district heat network.

The pipeline is a <4" pipeline that is expected to be trenched along highways and verges where possible.

The boundary for construction access purposes includes a 20m width accessible area crossing greenfield locations, and pavement + full road width along highways. A pipe bridge includes a 50x50m area on each side of the river crossing for construction access, but the pipe bridge itself would be much smaller. The pipeline is typical of medium/intermediate pressure natural gas piping.

The HyBont project only includes the hydrogen pipeline. However, the Ynysawdre Cluster heat network intends to utilise electrolyser waste heat via a further 2 district heating water (supply + return) pipelines. These pipelines would sensibly be placed along the same route as the hydrogen pipeline but do not necessarily need to be. This would form part of and be clarified in a separate application for the Sarn cluster heat network proposal whether they use the same route or not.

Hydrogen Production Facility



Solar PV Array

The proposed solar array at Bryncethin, on land adjacent to the BCBC Highway Depot, includes an array of ground-mounted solar panels and ancillary infrastructure including inverters (likely to be mounted behind the panels), LV transformer units, electrical infrastructure, control building, switch gear and substation, and temporary construction compound. It is anticipated that the useful life of the proposed development would be 25 - 30 years.

The St Bride's Minor site is owned by BCBC and is in use for recreation and grazing. A grazing licence has been granted for the site, however, the current tenancy agreement does not prevent a solar PV development at the site and grazing could potentially continue with the solar PV in situ. The total land area at the site is 22 Hectares and of this area, the solar farm is expected to use approximately 8 hectares.

The proposed solar farm would have a rated capacity of up to 5.5MWp, consisting of approximately 9,700 PV panels. The panels would be ground-mounted to a maximum height

above ground of approximately 3m. The panels would be oriented towards south and pitched at 20 degrees.

It is predicted that the solar farm would have a potential annual yield of approximately 5,190 MWh (based on the average solar irradiation figure for the site as taken from the Solar Radiation Database, and typical number of panels and dimensions).

The solar farm will be connected electrically via the private wire to the hydrogen production facility electrolyser located at the Brynmenyn Industrial Estate. Power generated by the solar farm will be delivered to the electrolyser load and meet approximately a quarter of the total annual electricity needs.

Access: The site benefits from good access due to its proximity to a main road and access from the Bryncethin Depot, west of the site boundary.

Private Wire Electrical Connection

The solar farm will be connected electrically to the Hydrogen Production Facility via a high voltage private wire connection. The private wire will be 3-phase 11kV.

There are two route options at present. **Option 1** is an undergrounded section to the northern boundary of solar farm, then a pole mounted overhead line (circa 35% of the route), followed by a second undergrounded section from the school to the Hydrogen Production Facility.

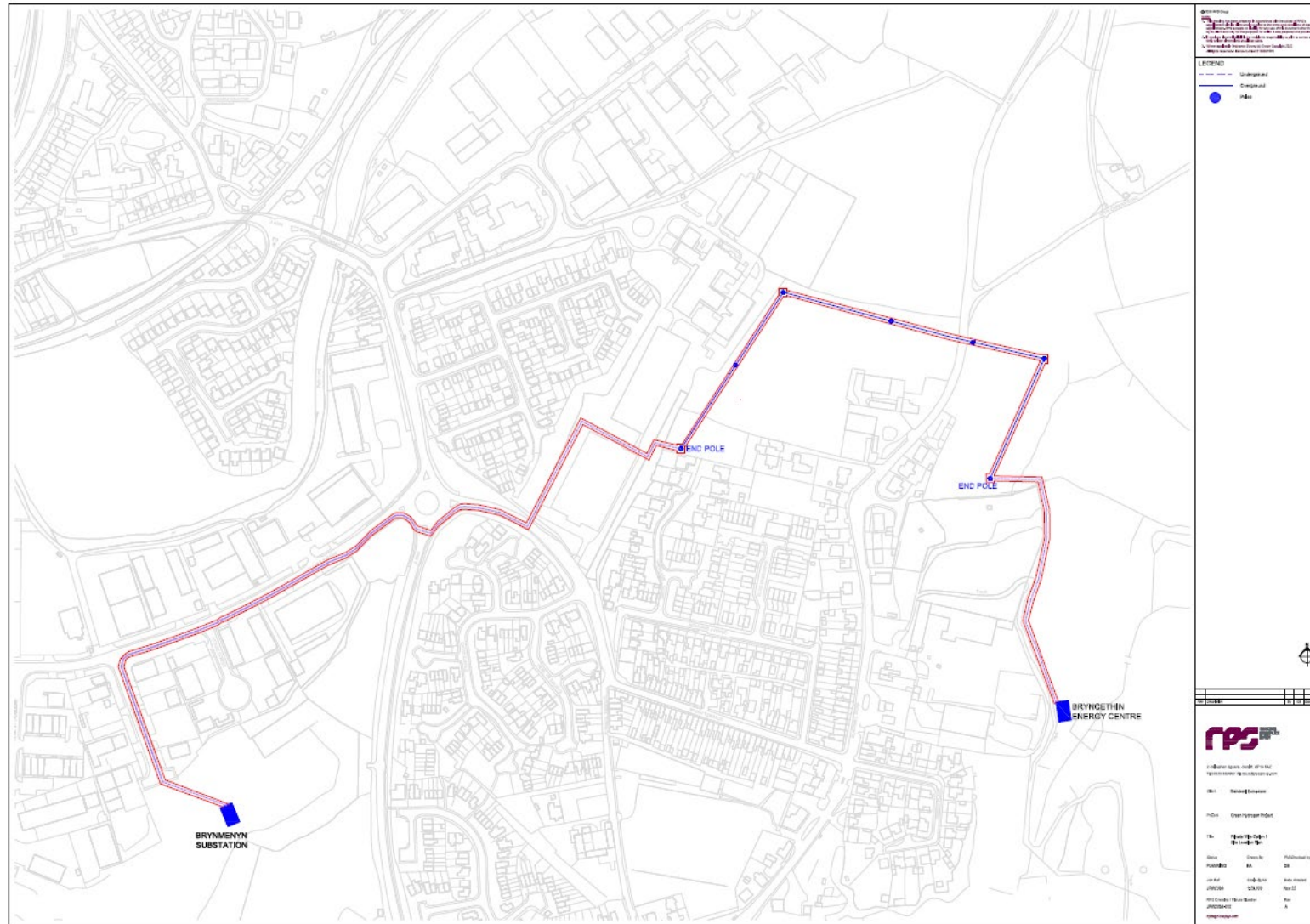
The overhead line will be similar to many other systems in the Bridgend area. The poles will be topped by three conductors, evenly spaced.

When the route changes direction the pole will be braced with steel lines anchored in the ground. **Option 2** is a fully undergrounded route. In both options the design guidance from National Grid Electricity Distribution will be used to ensure best practice in installation.

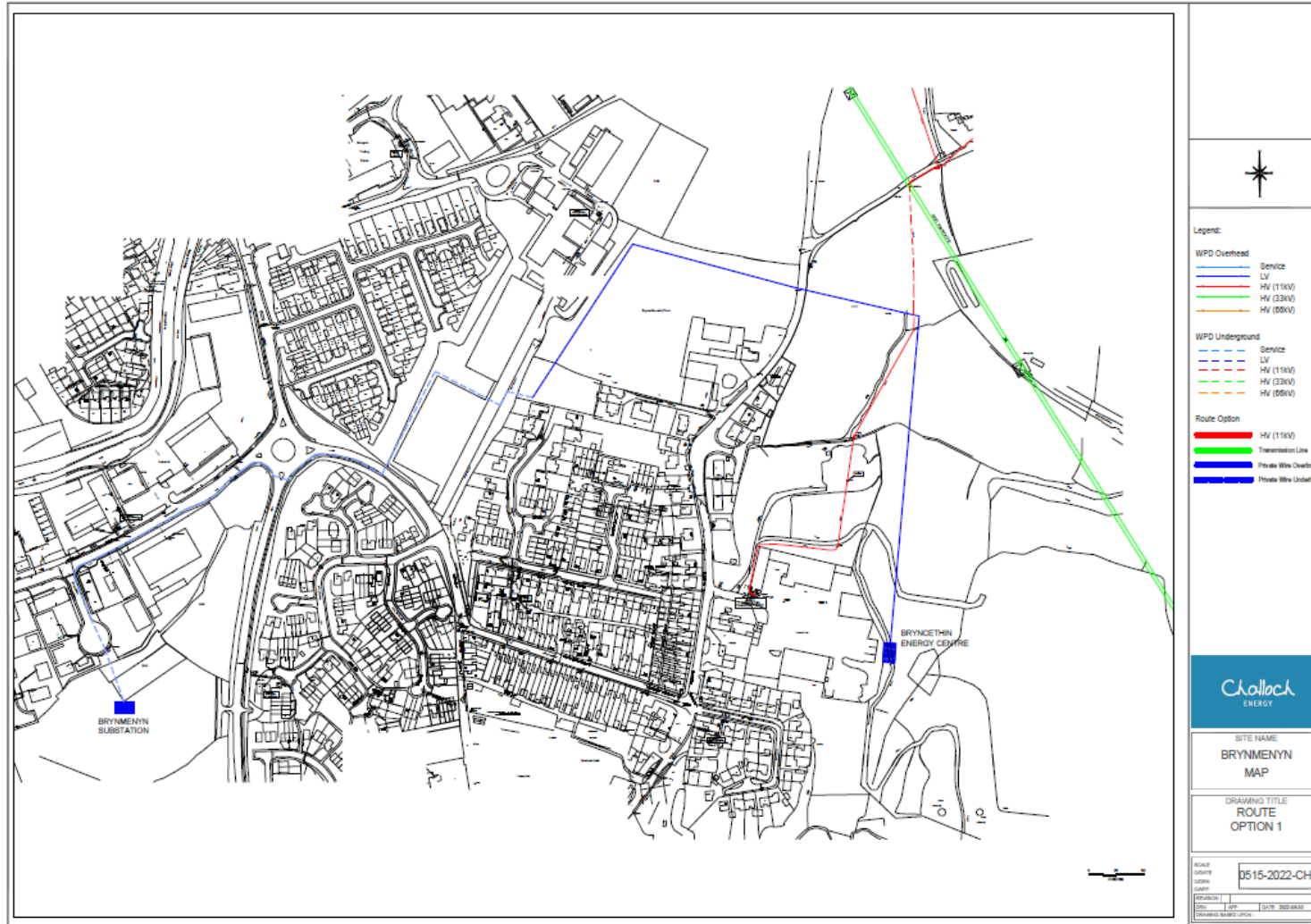
The reason for two options at present is to ensure that the private wire can be realised in the case that one route

proves to be undeliverable for any reason.

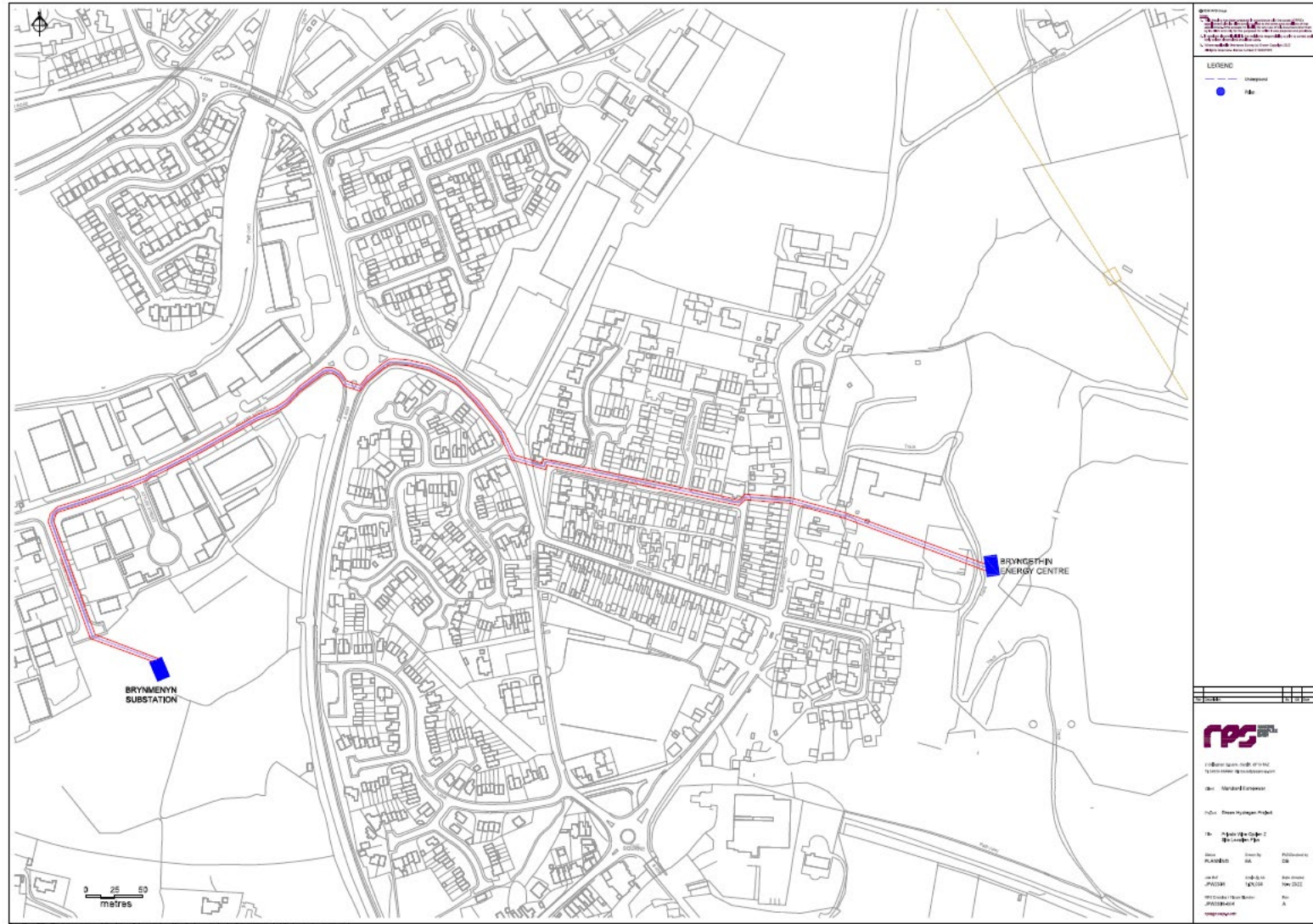
Private Wire Option 1



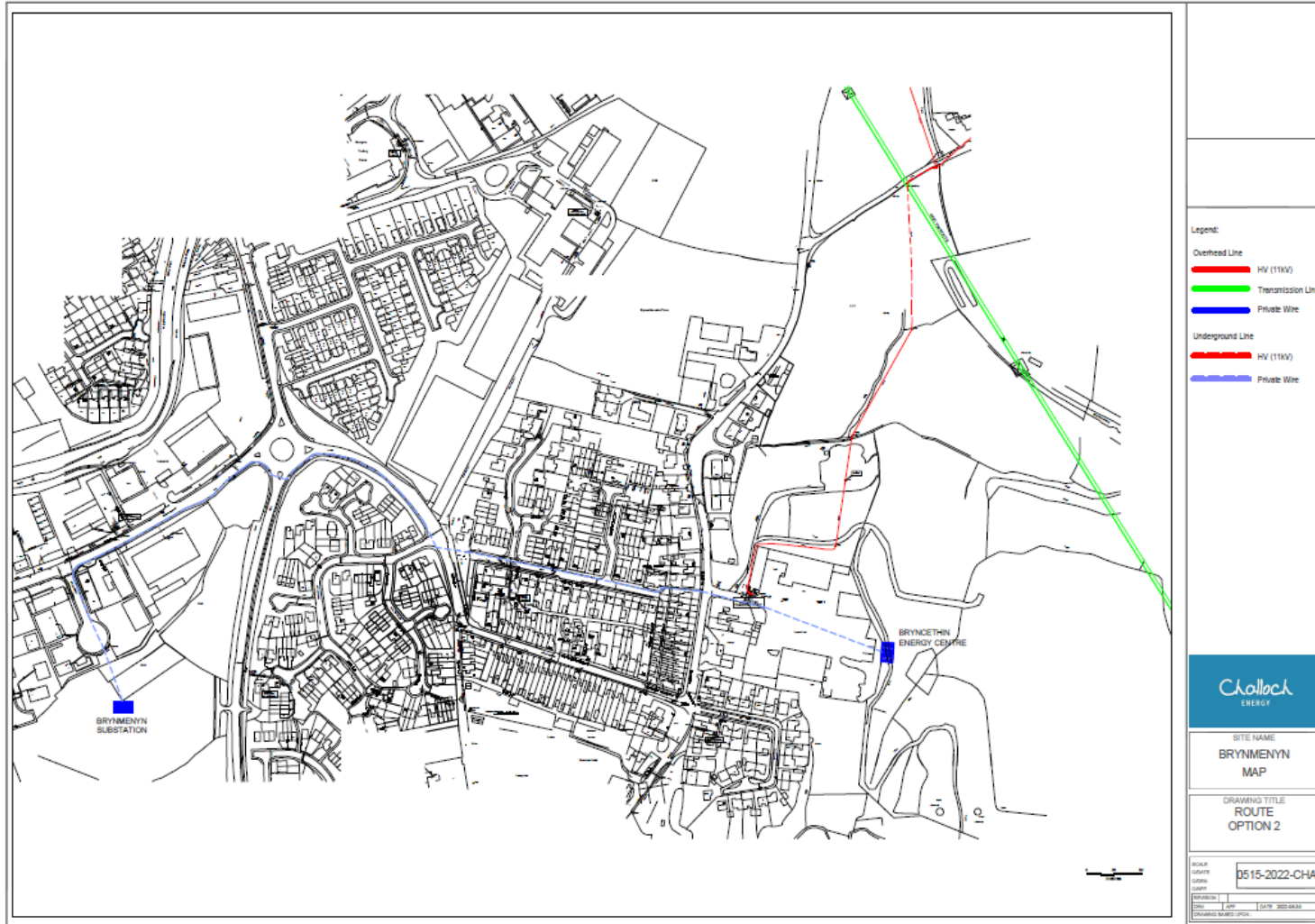
Private Wire Option 1



Private Wire Option 2



Private Wire Option 2



Design

This statement provides information additional to that contained within the submitted plans and application form, setting out the key parameters of the scheme.

The elevational material and standard details enclosed with the submission, provide an indication of appearance and materials.

As the scheme will be delivered under an Engineering, Procurement and Construction (EPC) contract, the details on building materials and the specifics of appearance are yet to be defined.

It is anticipated that the exact specifications of building and perimeter enclosure materials can be made the subject of conditionality on any planning permission.

Amount/Scale/Appearance

The proposals for both sites are plant and infrastructure and as such, form follows function in terms of appearance.

Generally the hydrogen production plant is a low rise development, save for some vent pipes as follows:

- Admin Building: <4m
- Substation Building: <4m
- Firewall: <3m
- Hydrogen Production Area Modules <6m (some vent pipes rising to <11m)
- Hydrogen Storage Area Modules <5m
- Utilities inc. firewater tank <4m.

For the solar array:

- Solar panels <3m above existing ground level
- Switchgear and admin building <4m.
- The panels are tilted at 20 degrees (actual panel row configuration length is 4.768m).
- The horizontal ground length of each panel row is 4.5m, and the gap in each row, is 5.1m.
- The inverter dimensions are 1,035 x 700 x 365 mm.

Design

The Hydrogen Production Facility shall be able to operate independently as a combined hydrogen production, storage, and hydrogen refuelling station site. The facility will be staffed in order to facilitate maintenance and operation of the site. The hydrogen production facility will consist of the following key components:

- Power systems (Transformer and Rectifier)
- Electrolyser stacks
- Gas conditioning (phase separation, drying, deoxidiser)

To support the operation of the electrolyser and to supply hydrogen to the consumers, the hydrogen production facility will also require:

- Feed water treatment and storage
- Cooling water systems for the electrolysers, compressors and power systems
- Hydrogen compression
- Hydrogen buffer storage
- 350 and 700 bar dispensers
- Tube trailer loading

- Hydrogen pipeline to consumers
- O2 and H2 vent
- Fire and gas detectors at appropriate locations
- Electrolyser building/containers
- Control room
- Utilities including plant/instrument air, nitrogen
- Wastewater treatment
- Fire water network & firefighting facilities
- All underground drains: This includes stormwater and wastewater drains
- Security including fencing, lighting, CCTV, office, security gate, pass system etc

All process equipment is expected to be primarily contained within prefabricated containerised units, delivered to site and founded on reinforced concrete pads.

The two new buildings required on site for the HV substation, and the admin/control building are anticipated to be of blockwork construction, with steel or timber roof truss structures.

Design

The 30 bar storage consists of conventional horizontal carbon steel storage vessels, these are used mainly to provide hydrogen storage for the pipeline. The 300 bar storage consists of 40ft containerised type IV composite material storage units.

Hydrogen Refuelling Stations will be located adjacent to both the Hydrogen Production area and the Hydrogen Storage areas to permit compact and efficient vehicle refuelling in the facility.

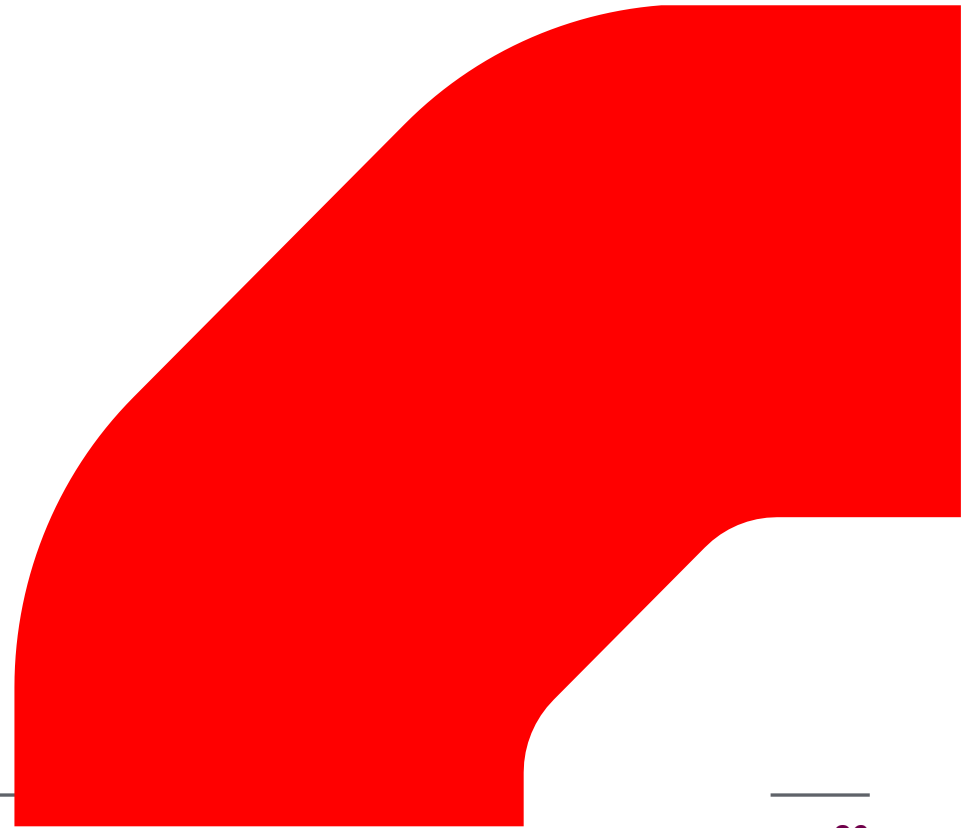
The tube-trailers will be used to distribute hydrogen to consumers. Hydrogen will be loaded into hydrogen tube-trailers using the tube-trailer loading bay adjacent to the hydrogen storage area of the HPF. The tube-trailers are expected to be standard 180 to 300 bar trailers.

Access

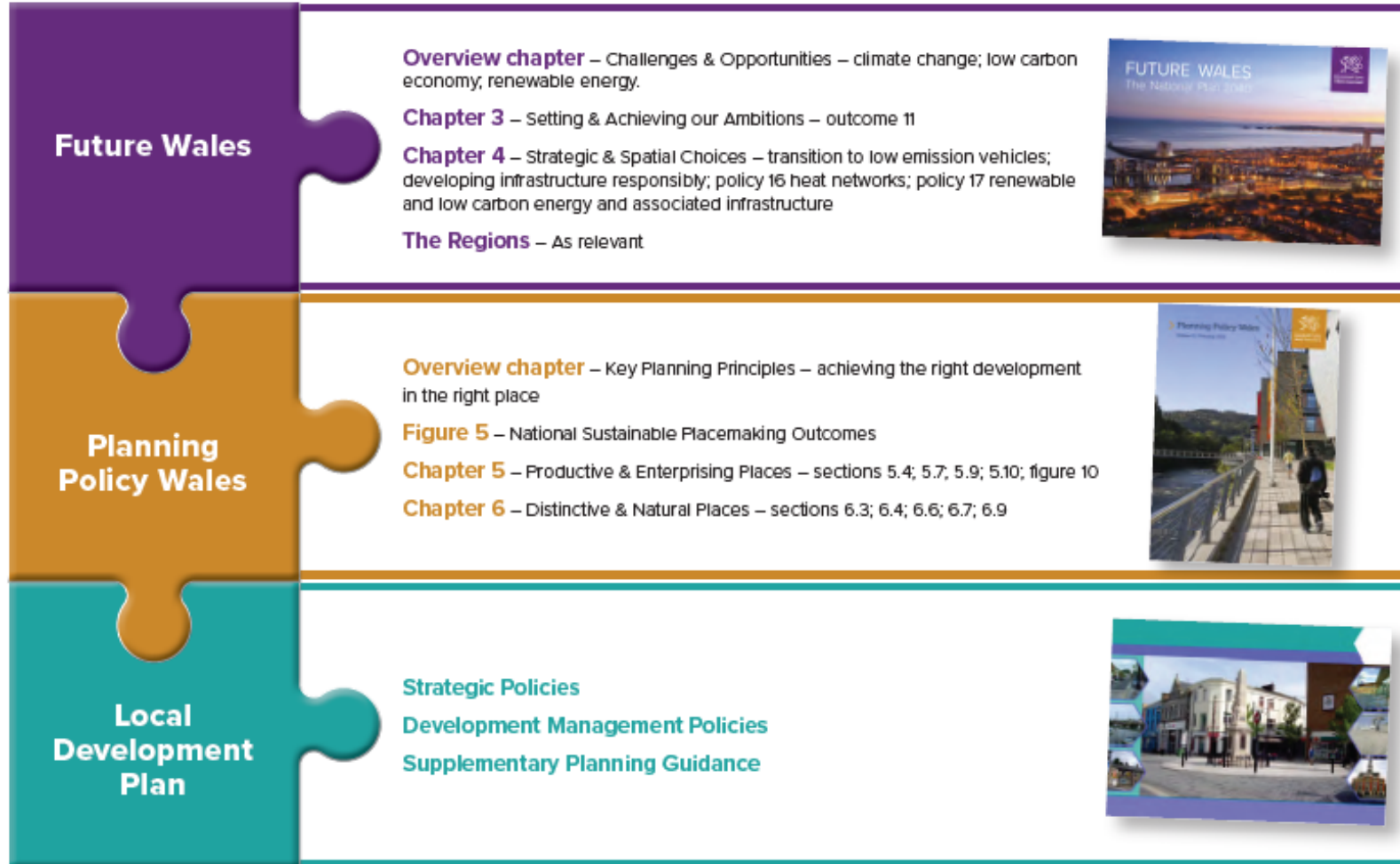
The proposed layouts set out the primary access to each site, which are further explored in the supporting Transport Statement for both construction and operational phases.

The proposals show that both sites can be readily accessed from the highway network.

Policy context and response



The Development Plan



Future Wales, The National Plan

Future Wales has been prepared in the context of Wales' three-tiered development plan system and positioned as the highest tier of development plan. It is a material consideration in plan making and decision making. The strategy seeks to address key national priorities through the planning system, by providing a framework which will in turn direct strategic and local development planning. Being focussed on solutions to issues and challenges at a national scale, it therefore does not allocate development to specific locations nor does it direct specific land uses.

Instead, Future Wales provides strategic direction for all scales of planning and sets out policies and key issues to be taken forward at the regional scale by Strategic Development Plans and at local authority level by Local Development Plans. Strategic and Local Development Plans are required to be in conformity with Future Wales and must be kept up to date to ensure they and Future Wales work together effectively.

The Plan is separated into five sections, with Sections 1 and 2 providing an introduction and an overview of the key challenges and opportunities facing Wales over the next 20 years. Section 3 sets out the desired outcomes and how the impact of Future Wales will be measured and assessed. Then Section 4 provides a strategic policy framework and, finally, Section 5 sets the Welsh Government's ambitions and policies for nationally important growth and development in the four regions of Wales.

A number of challenges and opportunities are identified for Wales nationally, challenges including climate change and Covid-19 and opportunities including progress towards a low carbon economy, renewable energy generation and abundance of natural resources. A changing society, the need for good quality housing, prosperity and improved connectivity are also identified as drivers for the next 20 years.

Future Wales' Outcomes are overarching ambitions based on the national planning principles and national sustainable placemaking outcomes set out in PPW11. The aim of the spatial strategy and regional ambitions contained within Future Wales is to achieve these outcomes.

Future Wales, The National Plan

These Outcomes are inter-related and inter-dependent and will improve places and well-being across Wales.

There are 11 outcomes set out in Future Wales which collectively are a statement of where Wales 'wants to be' in 20 years. These 11 outcomes envisage a Wales where people live:

... and work in connected, inclusive and healthy places;

... in vibrant rural places with access to homes, jobs and services;

... in distinctive regions that tackle health and socio-economic inequality through sustainable growth;

... in places with a thriving Welsh Language;

... and work in towns and cities which are a focus and springboard for sustainable growth;

... in places where prosperity, innovation and culture are promoted;

... in places where travel is sustainable;

... in places with world-class digital infrastructure;

... in places that sustainably manage their natural resources and

reduce pollution;

... in places with biodiverse, resilient and connected ecosystems; and

... in places which are decarbonised and climate-resilient.

Future Wales' spatial strategy aims to support Welsh Government to address the Climate Emergency declared in 2019 through its policies and ambitions.

Regarding climate change, Future Wales recognises that changes to our climate and weather patterns will have a significant impact on well-being on both current and future generations. Increasing temperatures and extreme weather events are putting pressure on ecosystems, infrastructure, built environment and our unique landscape and cultural heritage, which all contribute to social, economic and ecological resilience.

Future Wales, The National Plan

Climate change is identified as an equality issue as it will disproportionately affect the most vulnerable communities in Wales and the wider world. This is despite the most vulnerable communities historically contributing least to the problem of climate changing emissions. Vulnerable communities are more likely to be exposed to the risks and impacts of climate change without the ability to cope with or recover from those impacts.

It is noted that it is vital that we reduce our emissions to protect our own well-being and to demonstrate our global responsibility. Future Wales together with PPW will ensure the planning system focuses on delivering a decarbonised and resilient Wales through the places we create, the energy we generate, the natural resources and materials we use and how we live and travel.

Regarding energy generation, Future Wales identifies that Wales can become a world leader in renewable energy technologies. Wales' wind and tidal resources, potential for solar generation, its support for both large and community scaled projects and commitment to ensuring the planning system provides a strong lead for renewable energy development means it is well placed to support the renewable sector, attract new investment and reduce carbon emissions.

Future Wales contains three policies (16, 17 and 18) of specific

relevance to this project.

- **Policy 16 Policy 16 – Heat Networks** – identifies that within Priority Areas for District Heat Networks (which Bridgend is), planning authorities should identify opportunities for District Heat Networks and plan positively for their implementation. Large scale mixed-use development should, where feasible, have a heat network with a renewable/low carbon or waste heat energy source. Heat Networks are a method of delivering heating and hot water to buildings from a central heat source and, particularly in urban areas, can be the most effective way to provide low carbon heat. Waste heat can be an effective, efficient fuel source.
- **Policy 17 – Renewable and Low Carbon Energy and Associated Infrastructure** – expresses strong support for the principle of developing renewable and low carbon energy from all technologies and at all scales to meet our future energy needs. The policy states that in determining planning applications for renewable and low carbon energy development, decision-makers must give significant weight to the need to meet Wales' international commitments and our target to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency.

Future Wales, The National Plan

In respect of large-scale solar, Policy 17 states that all proposals should demonstrate that they will not have an unacceptable adverse impact on the environment. It also expects proposals should describe the net benefits the scheme will bring in terms of social, economic, environmental and cultural improvements to local communities. New strategic grid infrastructure for the transmission and distribution of energy should be designed to minimise visual impact on nearby communities.

- **Policy 18 – Renewable and Low Carbon Energy Developments of National Significance** – deals with Developments of National Significance ('DNS'). It is a criteria-based policy which states that such developments will be permitted (subject to policy 17) and the following:
 1. outside of the Pre-Assessed Areas for wind developments and everywhere for all other technologies, the proposal does not have an unacceptable adverse impact on the surrounding landscape (particularly on the setting of National Parks and Areas of Outstanding Natural Beauty);
 2. there are no unacceptable adverse visual impacts on nearby communities and individual dwellings;
 3. there are no adverse effects on the integrity of Internationally designated sites (including National Site Network sites and

Ramsar sites) and the features for which they have been designated (unless there are no alternative solutions, Imperative Reasons of Overriding Public Interest (IROPI) and appropriate compensatory measures have been secured);

4. there are no unacceptable adverse impacts on national statutory designated sites for nature conservation (and the features for which they have been designated), protected habitats and species;
5. the proposal includes biodiversity enhancement measures to provide a net benefit for biodiversity;
6. there are no unacceptable adverse impacts on statutorily protected built heritage assets;
7. there are no unacceptable adverse impacts by way of shadow flicker, noise, reflected light, air quality or electromagnetic disturbance;
8. there are no unacceptable impacts on the operations of defence facilities and operations (including aviation and radar) or the Mid Wales Low Flying Tactical Training Area (TTA-7T);

Future Wales, The National Plan

- 9. there are no unacceptable adverse impacts on the transport network through the transportation of components or source fuels during its construction and/or ongoing operation;
- 10. the proposal includes consideration of the materials needed or generated by the development to ensure the sustainable use and management of resources;
- 11. there are acceptable provisions relating to the decommissioning of the development at the end of its lifetime, including the removal of infrastructure and effective restoration.

Policy 18 also requires that the cumulative impacts of existing and consented renewable energy schemes should also be considered. Liaison with BCBC has not indicated any relevant developments in terms of cumulative impacts.

Planning Policy Wales (PPW)

PPW is centred around the well-being goals set out in the Well-being of Future Generations Act 2015 ('WBFG'). These are:

- A prosperous Wales
- A resilient Wales
- A healthier Wales
- A more equal Wales
- A Wales of cohesive communities
- A Wales of vibrant culture and thriving Welsh Language
- A globally responsible Wales.

Policy for the protection of the Best and Most Versatile Agricultural Land is set out at Paragraph 3.58 as follows:

“3.58 Agricultural land of grades 1, 2 and 3a of the Agricultural Land Classification system (ALC) is the best and most versatile, and should be conserved as a finite resource for the future.

3.59 When considering the search sequence and in development plan policies and development management decisions considerable weight should be given to protecting such land from development, because of its special importance. Land in grades 1, 2 and 3a should only be developed if there is an overriding need for the development, and either previously developed land or land in lower agricultural grades is

unavailable, or available lower grade land has an environmental value recognised by a landscape, wildlife, historic or archaeological designation which outweighs the agricultural considerations. If land in grades 1, 2 or 3a does need to be developed, and there is a choice between sites of different grades, development should be directed to land of the lowest grade.”

Neither site has land identified as best and most versatile and as such, the proposal is not in conflict with policy to protect such agricultural resources.

Section 5.7 of PPW – Energy – outlines the context to and the requirements of energy projects.

Paragraph 5.7.1 confirms that Welsh Government’s highest priority is to reduce demand wherever possible and affordable low carbon electricity must become the main source of energy in Wales. Renewable electricity will be used to provide both heating and transport in addition to power. The future energy supply mix will depend on a range of established and emerging low carbon technologies, including biomethane **and green hydrogen**.

Planning Policy Wales (PPW)

Paragraph 5.7.2 acknowledges that overall power demand is expected to increase as a result of growing electrification of transport and heat. PPW highlights that in order to ensure future demand can be met, significant investment will be needed in energy generation, transmission and distribution infrastructure.

The system will need to integrate renewable generation with storage and other flexibility services, in order to minimise the need for new generation and grid system reinforcement.

Paragraph 5.7.6 stresses that the planning system should secure an appropriate mix of energy provision, which maximises benefits to our economy and communities whilst minimising potential environmental and social impacts. This forms part of the Welsh Government's aim to secure the strongest economic development policies, to underpin growth and prosperity in Wales, recognising the importance of decarbonisation and the sustainable use of natural resources, both as an economic driver and a commitment to sustainable development.

The planning system should:

- integrate development with the provision of additional electricity grid network infrastructure
- optimise energy storage
- facilitate the integration of sustainable building design

principles in new development

- optimise the location of new developments to allow for efficient use of resources
- **maximise renewable and low carbon energy generation**
- **maximise the use of local energy sources, such as heat networks**
- minimise the carbon impact of other energy generation; and
- move away from the extraction of energy minerals, the burning of which is carbon intensive.

In determining applications for the range of renewable and low carbon energy technologies, national policy requires local planning authorities to take account of the following:

- the contribution a proposal will make to meeting identified Welsh, UK, and European targets
- the contribution to cutting greenhouse gas emissions; and
- the wider environmental, social, and economic benefits and opportunities from renewable and low carbon energy development.

Planning Policy Wales (PPW)

Paragraph 5.7.7 states:

“The benefits of renewable and low carbon energy, as part of the overall commitment to tackle the climate emergency and increase energy security, is of paramount importance.”

Paragraph 5.7.8 states an effective electricity grid network is required to fulfil the Welsh Government’s renewable and low carbon ambitions. It advocates an integrated approach towards planning for energy developments and additional electricity grid network infrastructure. In certain circumstances, additional electricity grid network infrastructure will be needed to support the Pre-Assessed Areas in Future Wales, but also new energy generating developments more generally.

Paragraph 5.7.12 acknowledges the important role that energy storage has 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.

PPW paragraph 5.7.14 confirms that a Welsh Government target for the generation of renewable energy is for Wales to generate 70% of its electricity consumption from renewable energy by 2030.

Section 5.9.19 sets out the key issues in determining applications for renewable and low carbon energy technologies. It states planning authorities should consider:

- The contribution a proposal will make to meeting identified Welsh, UK and European targets;
- The contribution to cutting greenhouse gas emissions; and
- The wider environmental, social and economic benefits and opportunities from renewable and low carbon energy development.

PPW paragraph 5.9.20 states 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;
- The impact on the natural and historic environment;
- Cumulative impact;
- The capacity of, and effects on the transportation network;

Planning Policy Wales (PPW)

- Grid connection issues where renewable (electricity) energy developments are proposed; and
- The impacts of climate change on the location, design, build and operation of renewable and low carbon energy development. In doing so, consider whether measures to adapt to climate change impacts give rise to additional impacts.

Prior to an application being submitted, developers for renewable and low carbon energy developments are encouraged, wherever possible, to consider how to avoid, or otherwise minimise, adverse impacts through careful consideration of location, scale, design and other measures.

Paragraph 5.9.22 states developers should take an active role in engaging with the local community on renewable energy proposals. This should include pre-application discussion and provision of background information on the renewable energy technology that is proposed.

Paragraph 5.9.24 states the Welsh Government supports renewable and low carbon energy projects that provide proportionate benefit to the host community or Wales as a whole.

Paragraph 5.9.25 states the social, environmental and economic (including job creation) benefits associated with any development should be fully factored into and given weight in the decision making process.

Paragraph 5.9.26 states that there are significant opportunities to achieve local benefits through renewable energy developments. Some benefits can be justified as mitigation of development impacts through the planning process. In addition, developers may offer benefits not directly related to the planning process.

Local authorities, where practical, should facilitate and encourage such proposals.

Bridgend Local Development Plan 2006-2021

The Development Plan is the Bridgend Local Development Plan adopted in September 2013. The LDP provides the statutory framework for the development and use of land within the plan area up to 2021. A replacement LDP is being prepared, but until such time as that is adopted, the existing Plan remains the basis for development management decision making.

We deal with the two sites firstly in terms of site specific policy context and then address policy common to both as set out below.

Land at Brynmenyn

The site falls within the Valleys Gateway Strategic Regeneration Growth Areas (SRGA) under Policy SP1 and, more specifically, the Main (Valleys Gateway) Settlement of Brynmenyn, as defined by Policy PLA1.

The site, as part of the neighbouring Brynmenyn Industrial Estate is allocated and protected for employment development falling within B1, B2 and B8 use classes by Policy REG1(18).

The site falls within the Tyn y Coed Farm SINC.

Land at Bryncethin

The site is outside, but adjacent to both the SRGA and settlement limits, the boundaries for both being the eastern extent of the

Council Highways depot. Utilities infrastructure is a form of development may be acceptable in such countryside locations. The site is also allocated for development, for tourism related facilities and attractions under Policy REG12 (5) Events Area, Bryncethin Clay Pits, Bryncethin. In this regard, there is a live planning application P/21/494/FUL for the establishment of 3 rugby pitches. This is a renewal of a 2014 permission.

The site is part within a secondary coal and sandstone resource safeguarding area under Policy ENV9, but is a temporary and reversible form of development in being a solar array and so the resource will remain available after the decommissioning of the site.

Part of the site in the south east is covered by the Pant Farm/Hirwaun Common SINC.

Bridgend Local Development Plan 2006-2021

Policies common to the scheme as a whole

- Policy SP2, deals with Design and Sustainable Place Making. The policy sets out that all development should contribute to creating high quality, attractive, sustainable places which enhance the community in which they are located, whilst having full regard to the natural, historic, and built environment. Matters such as scale and prominence, avoiding certain impacts such as noise and air pollution as well as safeguarding and enhancing biodiversity/green infrastructure are set out as being important to the amenity and viability of neighbouring uses and occupiers. The proposal is for the development of plant and infrastructure and thus there is naturally an operational and functional aesthetic in appearance, but through careful layout and siting, matters of sensitive receptor amenity have been considered. Retaining screening planting and keeping the solar array out of the most sensitive parts of the Bryncethin site have been design drivers.
- Policy SP4 on climate change and peak oil, requires all development proposals to make a positive contribution towards tackling the causes of an adapting to the impacts of climate change.
- Policy SP8 deals with renewable energy and states that where schemes contribute to meeting national targets, that they will be permitted subject to demonstrating that there will be no significant adverse impacts on the environment and local communities.
- Policy ENV18 is a similarly positively worded policy that permits proposals for renewable energy developments subject to 9 criteria, the following of which are relevant here:
 - 2. the availability of identified mineral resources or reserves will not be sterilised
 - 3. appropriate monitoring and investigation can demonstrate that the development will not have any significant impacts on nature conservation
 - 5. they can be safely accessed to permit regular maintenance without detriment to the environment or the public rights of way network
 - 6. they will not detrimentally affect local amenity by reason of noise emission, visual dominance, reflected light, the emission of smoke, fumes, harmful gases, dust, nor otherwise cause pollution to the local environment
 - 8. local receptors of heat and energy from the proposal are identified and, where appropriate, are connected to/benefit

Bridgend Local Development Plan 2006-2021

Policies common to the scheme as a whole

from the facility

- 9. provision has been made for the removal of all infrastructure from , and reinstatement of the site following termination of the use.
- Policy PLA5 sets out that development should not adversely affect safe and efficient movement in transport corridors and/or create or exacerbate harm to the environment along them and should be capable of mitigation where not complied with. Transport, ecology and air quality submissions in support of the application demonstrate compliance.
- Policy PLA11 requires compliance with adopted parking standards.
- Policy ENV4 sets out that development within or adjacent to a Site of Importance for Nature Conservation (SINC) should be compatible with their interest and not have an adverse impact on them unless the benefits of the proposal can be demonstrated to outweigh the harm and/or the harm can be reduced or removed by appropriate mitigation and/or compensation measures.
- Policy ENV5 required the provision of green infrastructure through protection enhancement and creation of new multi-functional areas of green space. Corridors will be safeguarded in 3 ways:
 1. Not permitting development that compromises their integrity and therefore that of the overall green infrastructure framework
 2. Using developer contributions to facilitate improvements to their quality and robustness
 3. Investing in appropriate management, enhancement and restoration and the creation of new resources.
- Policy ENV 6 establishes that in the first instance, proposals retain, conserve, restore and enhance wherever possible existing woodland, trees, hedgerows, wetlands, watercourses, ponds, green lanes/wildlife corridors, geological features and other natural features or habitats. It further sets out that where this is not possible, mitigation or compensatory measures will be required, including future management. Lastly, it sets out that proposals should avoid or overcome harm to nature conservation assets and/or wildlife species either in resident, in-situ or frequent habitats within the site on a migratory basis.

Bridgend Local Development Plan 2006-2021

Policies common to the scheme as a whole

- Policy ENV 7 deals with noise/air quality and contamination and requires development to demonstrate that it would not cause a new, or exacerbate an existing, unacceptable risk of harm to health, biodiversity and/or local amenity due to:
 1. Air pollution
 2. Noise pollution
 3. Light pollution
 4. Contamination (including invasive species)
 5. Land instability
 6. Water (including groundwater)
 7. Any other identified risk to public health or safety

Submissions in support of the application on air, noise, water, ground conditions demonstrate no unacceptable risks. The sites are known to have widespread Himalyan Balsam and that would be treated accordingly and can be dealt with by condition on any planning permission. Similarly, light pollution can be controlled by condition to ensure that sensitive receptors and the foraging, commuting and habitats for rest used by European protected

species are kept dark and protected from harmful light pollution.

Supplementary Planning Guidance (SPG)

A number of SPGs underpin the LDP and add detail to the policy context. Those of relevance are considered to be:

- SPG 7 Trees and Development
- SPG17 Parking Standards
- SPG19 Biodiversity and Development
- SPG 20 Renewables in the Landscape

The detail within each of these is reflected accordingly in the proposed layouts and the arboricultural, transport, biodiversity and landscape impact assessment technical reporting that supports this application and has informed the proposals overall.

Key Considerations

- Land use principles: both sites are vacant and allocated for development and neither site contains best and most versatile agricultural land. The principle of the proposal is acceptable in land use terms at both sites. Policy SP8 is effectively a 'presumption in favour' style policy, under which schemes such as this proposal will be permitted where there are no significant adverse environmental or community impacts. The policy is clear that impacts need to be significantly adverse for the presumption to not apply. Policy ENV18 is a similar core, relevant and positively worded policy in favour of the proposal for all of the criteria that apply to the specifics of this scheme.
- Biodiversity: neither sites form part of any international or national statutory designated site; however, three international designated sites are located within 10 km, namely the Blackmill Woodlands and Cefn Cribwr Grasslands Special Areas of Conservation (SAC), which are also designated at national level as Sites of Special Scientific Interest (SSSI), and Kenfig / Cynffig SAC. Several Local Wildlife Sites (LWS) or Sites Important for Nature Conservation (SINC) are located within 2 km. The phase 1 habitat survey and desk study summarised in the Preliminary Ecological Appraisal set out a number of phase 2 surveys, along with avoidance and mitigation recommendations.
- Tourism/recreation: the Bryncethin site is allocated to contribute to events and tourism in Bridgend. P/14/194/FUL was a conditional consent for three recreational rugby pitches and associated access and car parking. Liaison with the LPA indicates that the permission (issued on 6th March 2015) expired in 2020 and before the submission of application P/21/494/FUL. This application remains undetermined, Submissions for the application identify these pitches and the pavilion as a replacement for others in need of upgrading or to be lost, but many of the reports are from the 2014 permission. The reasons why the 2014 permission was not implemented are not spelt out in submissions available online, but the renewal is obviously a sign of intent to do so. It is also unclear what the below referenced upgrade and asset transfer mean for the 2021 application: <https://www.bridgend.gov.uk/news/bryncethin-rfc-pavilion-upgraded-following-successful-community-asset-transfer/>
- Access and transport: both sites can be readily accessed. There are no public rights of way impacted by the proposal. The Transport Statement and Construction Traffic Management Plans demonstrate that the proposal is acceptable in transport terms.

Key Considerations

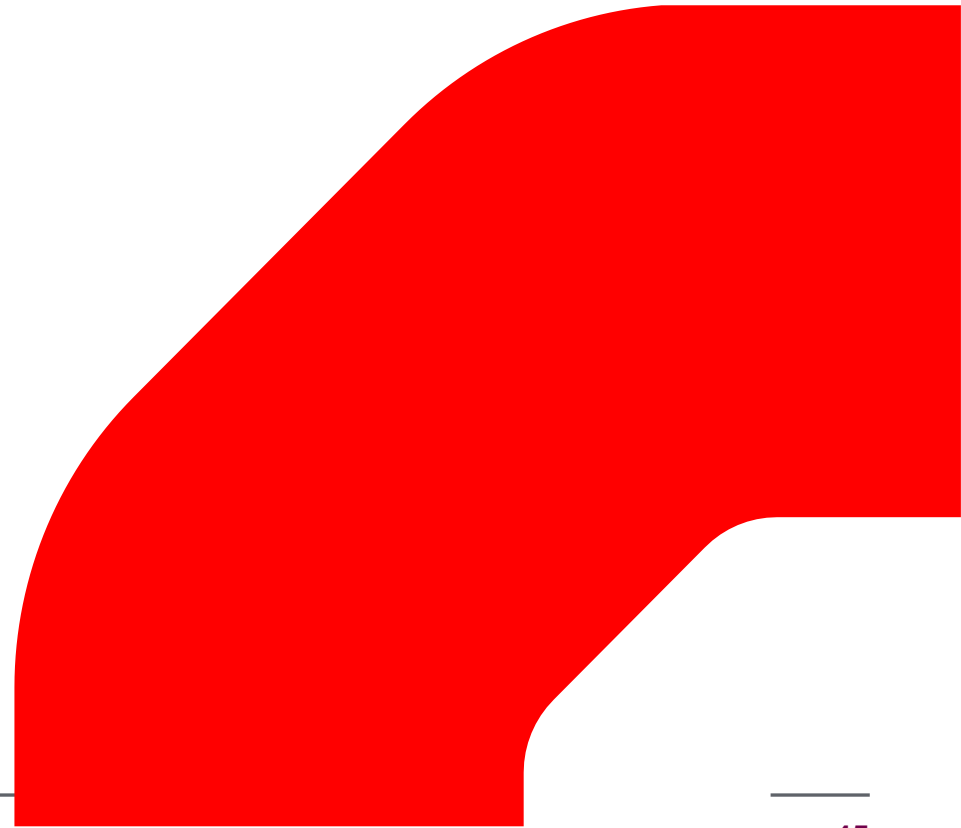
- **Landscape and Visual Impact:** Preliminary findings are that the sites do not fall within any statutory landscape designations of national importance, e.g. Areas of Outstanding Natural Beauty (AONB), but falls in close proximity to a Special Landscape Area (SLA), SLA 5: Mynydd y Gaer. It is proposed that trees, hedgerows and other planting established in association with the proposal would remain in-situ, except where it restricts the ability to farm, thus forming a permanent enhancement and improvement to the quantum and quality of existing tree cover and hedgerow green infrastructure network. Overall, it is considered that the sites are of moderate quality and typical of the landscape at the edge of settlement within the wider study area and of low to medium landscape value.
- **Amenity:** in respect of visual impact, overlooking and air quality, based on the nature of the scheme, the site location and context, technical assessments in support of the application conclude that there are no significant adverse impacts or harm arising. Refuelling operations are not expected to take place during the night.
- **Noise:** The baseline noise assessment work has involved the following:
 - Our methodology has been sent to the BCBC EHO.
 - A reply was received recommending an additional measurement location and the additional location added.
 - EHO agreement to our updated methodology.
 - A week long noise survey was completed 4th Oct 2022.
 - The data from the noise survey has been processed and analysed.
 - The noise levels captured will be used in our BS4142 assessment and the design assumptions are being worked through.
 - **Flood risk and drainage:** the Flood Consequences Assessment concludes that neither site is at risk of flooding as a result of the proposal. Foul and surface water discharges can be readily secured and have been agreed in principle through consultation with Dŵr Cymru Welsh Water's Planning Liaison team and with BCBC's lead Land Drainage officer.
 - **Archaeology/heritage:** neither site has assets of significance on site. There is a listed building south of the Brynmenyn site, but given the wider land is allocated for development, the principle of development is established.

The Planning Balance

- The proposal has been demonstrated to be in line with core principles and policies of the Development Plan. The two key LDP policies SP8 and ENV18 permit the proposal, subject to their being no significant adverse environmental or community impacts.
- Technical submissions made in support of the application have assessed the proposal on a topic by topic basis and conclude that the scheme's impacts are acceptable either because there is no significant adverse impact arising in the first place, or any identified harm has been designed out, or can be avoided or suitably mitigated such that it is not significantly adverse.
- The proposal strongly aligns with both national and local policy which supports de-carbonisation of energy, green energy production and climate change/net zero targets and commitments.
- Aside from the above policy compliance, there are other material considerations in favour of the scheme, including the overall environmental, economic and societal health and wellbeing benefits of bringing forward the scheme as proposed.
- It is also important that the proposal is on allocated land, thereby assisting in helping with the delivery of the Local Development Plan.
- In the round, it is concluded that on balance, the scheme is acceptable in planning terms and should be granted planning permission.

Appendix A.

Pre-application Advice



Damian Barry – Director
RPS
2 Callaghan Square
Cardiff
CF10 5AZ

Damian.barry@rpsgroup.com

Grwp Datblygu/Development Group (Planning)

Deialu uniongyrchol / Direct Line: 643173
Gofynnwch am / Ask for: Mr P Thomas

Ein cyf / Our ref: PE/192/2022

Eich cyf / Your ref:

Dyddiad / Date: 26 August 2022

Dear Mr Barry,

**MARUBENI EUROPOWER
BRYNMENYN (HYDROGEN PLANT) & BRYNCETHIN (SOLAR ARRAY)
LAND AT BRYNMENYN AND BRYNCETHIN**

Thanks to all for your attendance and valuable contributions to the online meeting on 16th August 2022 in relation to the above project. Our aim is to enable and promote high quality development and the purpose of the meeting was for Officers to set out the development constraints and planning policy context, identify the technical reports and assessments that will need to accompany any future application, some guidance on procedures and the likely key issues in the assessment of a future planning application.

PROPOSALS

The Green Hydrogen Production Facility is proposed on a greenfield site adjacent to and accessed from Brynmenyn Industrial Estate. It will comprise a hydrogen production facility with electrolyzers that generate hydrogen from electrical power by splitting water, hydrogen storage, and a hydrogen refuelling station. It will occupy approximately 1 hectare although no details of the layout, buildings and structures are available at this time. Most of the equipment and buildings would be expected to be less than 4m in height, with the tallest structure e.g., atmospheric vents typically being less than 10m in height. The facility, when fully operational should produce some 300 tonnes of hydrogen per year which could be used to fuel Refuse Collection Vehicles, buses, and the heating demands of nearby schools, community buildings etc.

The proposed solar array will occupy some 8 hectares of land to the east of Bryncethin and will include an array of ground-mounted solar panels and ancillary infrastructure including inverters transformer units, electrical infrastructure, switch gear and substation, and temporary construction compounds. The solar farm would have a rated capacity of up to 5.0MW, consisting of approximately 14,700 PV panels, all ground-mounted to a height of 3m above ground level (approx.). The solar farm will be connected electrically via a private wire to the hydrogen production facility. Power generated by the solar farm will be delivered to the electrolyser load and meet approximately a quarter of the total annual electricity needs. The solar array site is accessed from the Council's Bryncethin Depot.

REVIEW OF SITE HISTORY AND DEVELOPMENT CONSTRAINTS

I would refer you to Appendices A and B at the end of this response.

REVIEW OF NATIONAL AND LOCAL PLANNING POLICY

National Policy

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental, and cultural well-being of Wales. Up-to-date development plans are the basis of the planning system and set the context for rational and consistent decision making. Plans at all levels of the development plan hierarchy must be prepared in accordance with national planning policies.

Development management is the positive and proactive approach to shaping, considering, determining, and delivering development proposals through the process of deciding planning applications. It is led by the planning authority, working collaboratively with those proposing developments and other stakeholders including the local community

The national sustainable placemaking outcomes listed below should be used to inform the assessment of all development proposals:

- Growing our economy in a sustainable manner
- Making best use of resources
- Facilitating accessible and healthy environments
- Creating & sustaining communities
- Maximising environmental protection and limiting environmental impact

The above outcomes provide a framework which contains those factors which are considered to be the optimal outcome of individual developments. These outcomes should be the starting point for decision takers and be considered at the earliest possible opportunity. Not every development proposal will be able to demonstrate they can meet all the above outcomes. However, this does not mean that they should not be considered in the development management process to see if a proposal can be improved or enhanced to promote wider well-being. Planning Policy Wales reminds both developers and planning authorities that it is our role to identify these opportunities and act upon them. In the context of this proposal the following outcomes should be considered:

- Community based facilities and services
- Makes best use of natural resources
- Prioritises the use of previously developed land and existing buildings
- High quality and built to last
- Generates its own renewable energy
- Resilient biodiversity and ecosystems
- Distinctive and special landscapes
- Integrated green infrastructure

- Appropriate soundscapes
- Reduces environmental risks
- Clean air
- Reduces overall pollution
- Resilient to climate change
- Accessible by means of active travel and public transport
- Not car dependent
- Minimises the need to travel

Development in the countryside should be located within and adjoining those settlements where it can best be accommodated in terms of infrastructure, access, habitat, and landscape conservation. However, new building in the open countryside away from existing settlements or areas allocated for development in development plans must continue to be strictly controlled. All new development should be of a scale and design that respects the character of the surrounding area.

Paragraph 5.7.1 confirms that Welsh Government's highest priority is to reduce demand wherever possible and affordable low carbon electricity must become the main source of energy in Wales. Renewable electricity will be used to provide both heating and transport in addition to power. The future energy supply mix will depend on a range of established and emerging low carbon technologies, including biomethane and **green hydrogen**.

The planning system should:

- integrate development with the provision of additional electricity grid network infrastructure
- optimise energy storage
- facilitate the integration of sustainable building design principles in new development
- optimise the location of new developments to allow for efficient use of resources
- **maximise renewable and low carbon energy generation**
- **maximise the use of local energy sources, such as heat networks**
- minimise the carbon impact of other energy generation; and
- move away from the extraction of energy minerals, the burning of which is carbon intensive

In determining applications for the range of renewable and low carbon energy technologies, national policy requires local planning authorities to take account of the following:

- the contribution a proposal will make to meeting identified Welsh, UK, and European targets
- the contribution to cutting greenhouse gas emissions; and
- the wider environmental, social, and economic benefits and opportunities from renewable and low carbon energy development.

Future Wales – the National Plan 2040 contributes the national and highest tier of the development plan in Wales. Its content is strongly influenced by PPW and provides strategic direction for all scales of planning and sets out policies and key issues to be taken forward at the regional scale. With regard to this proposal, I would direct you to Policies 9 (Resilient Ecological Networks and Green Infrastructure), & 17 (Renewable and Low Carbon Energy and Associated Infrastructure).

Local Planning Policies

The Development Plan for the area comprises the Bridgend Local Development Plan 2006-2021 (LDP) which was formally adopted by the Council in September 2013 and within which the following Policies are of relevance: -

Green Hydrogen Production Facility – Brynmenyn	
Policy SP1	Regeneration-Led Development in the Valleys Gateway Strategic Regeneration Growth Area
Policy PLA1	Settlement Hierarchy and Urban Management – the main settlement - Valley Gateway settlements of Aberkenfig/Bryncethin/Brynmenyn/Sarn/Tondu/Ynysawdre
Policy REG 1 (18)	Employment Sites – the site is allocated and protected for employment development falling within the uses B1, B2 and B8 at Brynmenyn Industrial Estate. (B2 use?)
Solar Array - Bryncethin	
Policy SP4	Development which will conserve and, wherever possible, enhance the natural environment of the County Borough will be favoured. Development proposals will not be permitted where they will have an adverse impact upon: <ul style="list-style-type: none"> • The integrity of the County Borough's countryside • The character of its landscape • Its biodiversity and habitats; and • The quality of its natural resources including water, air, and soil
Policy ENV1	Development in the countryside of the County Borough will be strictly controlled. Development may be acceptable where it is necessary for: <ul style="list-style-type: none"> • Transportation and/or utilities infrastructure
Policy ENV9	Development in Mineral Safeguarding Areas: Development proposals within mineral safeguarding areas, either permanent or temporary, will need to demonstrate that:

	<ol style="list-style-type: none"> 1) If permanent development, the mineral can be extracted prior to the development, and/or the mineral is present in such limited quantity or quality to make extraction of no or little value as a finite resource and 2) In the case of residential development, the scale and location of the development e.g., limited infill/house extensions, would have no significant impact on the possible working of the resource; and 3) In the case of temporary development, it can be implemented, and the site restored within the timescale the mineral is likely to be required.
Policy REG12 (5)	<p>New or extended tourist facilities, accommodation and attractions in the countryside will only be permitted where:</p> <ol style="list-style-type: none"> 1. The activity is compatible with and complimentary to the countryside location, including nature conservation interests 2. The proposed development is part of an appropriate rural enterprise/farm diversification scheme 3. The proposal assists in the promotion, and is compatible with the role of Bryngarw Country Park and Pontycymmer, Blaengarw, Llangeinor, Blackmill, Nantymoel and Caerau as destination hubs; and/or 4. The proposed development is compatible with the enhancement of its context in terms of its form, materials, and details. <p>Specific sites are allocated for tourism related facilities and attractions at the following locations: Events Area, Bryncethin Clay Pits, Bryncethin</p>
POLICIES RELEVANT TO BOTH SITES	
Policy SP2	<p>Design and Sustainable Place Making - all development should contribute to creating high quality, attractive, sustainable places which enhance the community in which they are located, whilst having full regard to the natural, historic, and built environment.</p> <p>Key Considerations: Having a design of the highest quality possible, whilst respecting and enhancing local character and distinctiveness and landscape character//Being of an appropriate scale, size, and prominence//avoiding or minimising noise, air, soil, and water pollution//Safeguarding and enhancing biodiversity and green infrastructure//ensuring that the viability and amenity of neighbouring uses and their users/occupiers will not be adversely affected//</p>
Policy SP4	<p>Climate Change and Peak Oil – All development proposals will be required to make a positive contribution towards tackling the causes of and adapting to the impacts of Climate Change.</p>
Policy SP8	<p>Renewable Energy - Development proposals which contribute to meeting national renewable energy and energy efficiency targets will be permitted where it can be demonstrated that there will be no significant adverse impacts on the environment and local communities.</p>

Policy ENV18	Renewable Energy Developments - Proposals for renewable energy developments will be permitted provided that: 1) In the case of wind farm developments of 25MW or more, the preference will be for them to be located within the boundary of the refined Strategic Search Area; 2) The availability of identified mineral resources or reserves will not be sterilised; 3) Appropriate monitoring and investigation can demonstrate that the development will not have any significant impacts on nature conservation; 4) Appropriate arrangements have been made for the preservation and/or recording of features of local archaeological, architectural or historic interest; 5) They can be safely accessed to permit regular maintenance without detriment to the environment or the public rights of way network; 6) They will not detrimentally affect local amenity by reason of noise emission, visual dominance, shadow flicker, reflected light, the emission of smoke, fumes, harmful gases, dust, nor otherwise cause pollution to the local environment; 7) They will not lead to electromagnetic disturbance to existing transmitting and receiving systems (which includes navigation and emergency services), thereby prejudicing public safety; 8) Local receptors of heat and energy from the proposal are identified and, where appropriate, are connected to/benefit from the facility; and 9) Provision has been made for the removal of all infrastructure from, and reinstatement of the site following termination of the use
HIGHWAYS	
Policy SP3	Strategic Transport Planning Principles - all development proposals should promote safe, sustainable, and healthy forms of transport through good design, enhanced walking and cycling provision, and improved public transport provision.
Policy PLA5	Development in Transport Corridors - Development which would: a) adversely affect safe and efficient movement in these corridors; and/or b) create or exacerbate harm to the environment along them; and/or c) not be capable of mitigation; will not be permitted.
Policy PLA11	All development will be required to provide appropriate levels of parking. This should be in accordance with adopted parking standards. (Reference SPG 17: Parking Standards)
BIODIVERSITY/S6 REQUIREMENTS	
Policy ENV4	Development within or adjacent to a Site of Importance for Nature Conservation (SINC) should be compatible with the nature conservation or scientific interest of the area, whilst promoting their educational role. Developments which would have an adverse impact on these sites will not be permitted unless the benefits associated with the development can be demonstrated to outweigh the harm and/or the harm can be reduced or removed by appropriate mitigation and/or compensation measures.
Policy ENV5	Green infrastructure will be provided through the protection and enhancement of existing natural assets and the creation of new multi-functional areas of green

	space. Green infrastructure corridors will connect locations of natural heritage, green space, biodiversity, or other environmental interest. They will be safeguarded through 1) Not permitting development that compromises their integrity and therefore that of the overall green infrastructure framework 2) Using developer contributions to facilitate improvements to their quality and robustness 3) Investing in appropriate management, enhancement and restoration, and the creation of new resources.
Policy ENV6	Proposals for development or redevelopment will be required to: 1. In the first instance, retain, conserve, restore and enhance wherever possible existing: a) Woodland b) Trees c) Hedgerows d) Wetlands e) Watercourses f) Ponds g) Green Lanes/Wildlife Corridors h) Geological Features i) Other Natural Features or Habitats. 2. Where this is demonstrated not to be possible, suitable mitigation or compensatory measures will be required to secure biodiversity including future management programmes. 3. Avoid or overcome harm to nature conservation assets and/or species of wildlife which may be either resident, in-situ or which can be demonstrated to have frequented habitats within the site on a migratory basis.
PROTECTING AMENITIES (Noise/Air Quality/Contamination)	
Policy ENV7	Development proposals will only be permitted where it can be demonstrated that they would not cause a new, or exacerbate an existing, unacceptable risk of harm to health, biodiversity and/or local amenity due to 1) Air pollution; 2) Noise pollution; 3) Light pollution; 4) Contamination (including invasive species); 5) Land instability; 6) Water (including groundwater) pollution; 7) Any other identified risk to public health or safety. Development in areas currently subject to the above will need to demonstrate mitigation measures to reduce the risk of harm to public health, biodiversity and/or local amenity to an acceptable level.
S106 REQUIREMENTS	
Policy SP14	Infrastructure: Applications for development should include material proposals which deal with the fair and reasonable infrastructural requirements of the development, and which help to mitigate any negative impacts that may arise as a consequence of the development. Where appropriate, such proposals will be secured by means of planning agreements/obligations.

The Council has also produced a series of Supplementary Planning Guidance Notes, the following of which are relevant to this enquiry:

- [SPG 7 Trees and Development](#)
- [SPG 17 Parking Standards](#)
- [SPG 19 Biodiversity and Development](#)
- [SPG 20 Renewables in the Landscape](#)

Supplementary Planning Guidance (SPG: 20) is part of a suite of Green Infrastructure SPGs produced by the Council to promote the strategic management and planning of landscapes to deliver multiple (social, economic, and environmental) benefits. The SPG recognises that the varied landscapes of the County Borough have a significant economic, social and community value, contributing to a sense of identity, well-being, enjoyment, and inspiration. At the same time, many parts of the landscape have good conditions to produce wind and solar energy and development must be managed carefully, to achieve the greatest contribution towards energy needs, while at the same time ensuring that the valued characteristics of the landscape are not unacceptably harmed. The SPG includes an assessment of the sensitivity of the County Borough's landscapes to different scales of wind and solar photovoltaic energy developments. It also includes general guidance for developers to follow when planning and designing schemes, as well as specific information tailored to each of Bridgend's 15 Landscape Character Areas to reflect local variations in landscape character.

The Landscape Sensitivity Assessment which forms part of the SPG indicates that the Hirwaun Common and Surrounding Ridges Landscape Character Area would have a moderate to high sensitivity to the scale of solar farm proposed by the enquiry.

The SPG provides generic guidance on the siting and design of free-standing solar PV development that will help ensure that adverse landscape and visual effects are addressed satisfactorily, including cumulative landscape and visual effects. I would draw your attention to paragraphs 3.17 to 3.19 on pages 42-45 of the SPG.

The SPG also provides guidance on Landscape and Visual Impacts Assessments which would need to accompany any future application. The advice offered in Paragraphs 3.24 to 3.31 on pages 46 & 47 should be considered in the preparation of this document.

PRE-APPLICATION PROCEDURES

From our discussions, it is understood that a single application will be submitted for the hydrogen facility and solar array. As individual projects they would be listed under Schedule 2 of the Town and Country Planning (Environmental Impact Assessment (Wales) Regulations 2017 (the EIA Regulations). A Screening Opinion Request has been submitted and is currently under consideration.

The requirement to undertake pre-application consultation, as set out in part 1A of the Development Management Procedure (Wales) Order 2012 applies to all planning applications for 'major' development, whether for full or outline permission. Prior to submitting an application for major development, the developer must:

- **publicise a draft of the application** - that is the information that would be required to be submitted as part of a formal planning application. This includes - Scaled plans, with north arrow, to identify the land to which the application relates; all other scaled plans, drawings and information that would be required to describe the proposed development – this includes any

technical documents that would be needed in order to validate any subsequent application; Design and Access Statement; Draft Environmental Statement if required.

- **consult landowner or occupier of adjacent land, the community including town and community councils and local members and 'specialist consultees'** (the developer should display site notices on or near the site for a 28-day period)

- **write a report about the pre-application consultation undertaken** – this will accompany the subsequent application

If the development is in our opinion EIA development, the developer must make available draft reports and information that will be used to form an Environmental Statement as part of the statutory pre-application process.

The list of 'specialist consultees' was not discussed at our recent meeting, but I would recommend that the following are considered:

- Transportation and Engineering (Highways) – Contact: Robert Morgan Rob.Morgan@bridgend.gov.uk
- Countryside Management Team (Ecology) – Contact: Robert.Jones@bridgend.gov.uk
- Rights of Way Officer – Contact: Andrew Mason Andrew.Mason@bridgend.gov.uk
- Land Drainage (SAB Approval) – Contact; Gethin.Powell@bridgend.gov.uk
- Shared Regulatory Services (Pollution Control – Noise) – Contact: Helen Williams hewilliams@valeofglamorgan.gov.uk
- Specialist Services Officer (Specialist Enterprise Services) – Air Quality & Emissions to Air – Contact: Adam Spear aspear@valeofglamorgan.gov.uk
- Natural Resources Wales (Ecology and Drainage)
Contact: swplanning@cyfoethnaturiolcymru.gov.uk
- Dwr Cymru Welsh Water – Contact: developer.services@dwrwymru.com
- Public Health Wales/ Cwm Taf Morgannwg University Health Board
- Statutory Undertakers: Wales and West Utilities - enquiries@wwutilities.co.uk and Western Power Distribution - WPDMapResponse@westernpower.co.uk
- South Wales Police and South Wales Fire Service

The sites are located in the St Brides Minor and Ynysawdre Electoral Division and St Brides Community, represented by Councillors Tim Thomas, Paula Ford, and Mark John – see contact details below:

Cllr.Timothy.Thomas@bridgend.gov.uk

Cllr.Paula.Ford@bridgend.gov.uk

cldr.mark.john@bridgend.gov.uk

The Clerk to St Brides Community Council is Mrs A Harris, Sarn Lifelong Learning Centre, Merfield Close, Sarn, Bridgend, CF32 9SW (Tel: 07949451690)

Full details of the above procedures can be found in Section 6.4 of the Development Management Manual 2017 <http://gov.wales/docs/desh/publications/170505development-management-manual-en.pdf>

Good engagement is more than ‘ticking a box’ and every development can benefit from effective engagement. The legislative requirements set out the minimum activity that needs to be undertaken for major development. However, Welsh Government and this Council encourages developers to go further than the minimum to get the most out of the process.

For the community, this proposal will represent a significant change to the environment which is likely to be perceived negatively. The challenge is for the developer to consult widely and clearly to capture a balanced and informed response. Such engagement should increase the level of transparency, develop relationships, and shape the project by considering and responding to feedback.

COMMENTS RECEIVED FROM CONSULTEES TO THE PRE-APPLICATION ENQUIRY

The Bridgend Test Case – Green Hydrogen Project document includes a review of the local validation and site-specific requirements and identifies the information that would need to accompany a future application. In addition to the reports and technical documents listed, I would draw your attention to the responses received thus far from consultees to the pre-application enquiry and the information requested: -

CONSULTEE	Officer	COMMENTS
Transportation (Highways)		Green Hydrogen Production Facility – Brynmenyn A Traffic Impact Assessment (TIA) will need to be undertaken in respect of this part of the development. Key issues to consider at the start of preparing a Transport Assessment or Statement may include: <ul style="list-style-type: none">• the planning context of the development proposal – existing road corridors protected by local planning policy• appropriate study parameters (i.e., area, scope, and duration of study) – further discussion with the highway officer may be necessary

- assessment of public transport capacity, walking/cycling capacity and road network capacity
- road trip generation and trip distribution methodologies and/ or assumptions about the development proposal – it will be critical to understand how the site will operate, the movements associated with the production, refuelling and storage of hydrogen; expected volume of traffic on the network from the commencement of the operation and potential for expansion of facility
- TRICS assessment with similar facilities or if data does not exist, comparable uses such as fuel depots, filling stations etc.
- measures to promote sustainable travel
- safety implications of development; and
- mitigation measures (where applicable) – including scope and implementation strategy.

Solar Array – Bryncethin

A Transport Statement should be prepared for this aspect of the project on the basis that the operation of the solar array is unlikely to have a significant impact on the highway network. The TS will need to consider the following:

- Existing road conditions and proposed access arrangements – swept path analysis to demonstrate that the access will accommodate the required construction vehicles
- Construction, operation, and decommissioning – this will need to include trip generation (construction and operation), the routing of vehicles (construction) to avoid the constrained parts of the local network and school times, time frames for construction, how many vehicles when operational
- site management and traffic management measures during construction – CTMP

Private Wire Connections (public highway)

The latest option plans for the proposed private wire connections are currently being reviewed by the Highways Network Manager. I will provide a further response on this matter in due course.

Biodiversity and Policy

Green Hydrogen Production Facility – Brynmenyn

Under certain circumstances, a Phase 1 Habitat Survey would be required to record habitat types on site, assessing the potential for protected or otherwise notable species present and assessing the key processes influencing the ecology of the site. It is understood however that managed clearance works have been undertaken. There may however be a requirement, through the planning permission to secure compensation for the clearance works, possibly in the form of habitat creation or the or the provision of long-term management arrangements to enhance existing habitats and deliver a net benefit for biodiversity. A

full ecological assessment before habitat creation or restoration starts would be required.

Solar Array – Bryncethin

Part of the site is covered by the Pant Farm/Hirwaun Common SINC, an important habitat comprising of acidic marshy grassland/continuous bracken/scattered scrub. A Phase 1 Habitat Survey and Review of SINC will be required. This will need to record habitat types on site, assessing the potential for protected or otherwise notable species present and assessing the key processes influencing the ecology of the site. It is expected that the Phase 1 survey will record information about:

- Habitat types and main plant communities
- Features of potential importance for nature conservation including hedges, veteran trees etc.
- Presence, or potential for presence, of legally protected species, principal species of biodiversity importance, or species of local conservation concern
- Requirements for additional surveys and timing for those surveys
- Presence of invasive/problem species, such as Japanese Knotweed, Himalayan Balsam, Rhododendron ponticum
- Processes, natural or otherwise, that influence biodiversity within the zone of influence; and
- Opportunities for enhancement.

Land Drainage

The proposed development site at Brynmenyn is not located within a flood risk zone or within 20m of a watercourse. Part of the southern area of the proposed development site at Bryncethin is located within a flood risk zone and there are several mapped watercourses (and ditches) located within the development area.

The application form does not state the proposed foul water disposal method. No foul drainage layout has been provided. The mapping database suggests there is a DCWW public combined sewer crossing the development site at Brynmenyn, the applicant shall contact DCWW to confirm if a build over sewer agreement or sewer diversion is required. It is not anticipated that foul water disposal will be required for the Bryncethin site. The applicant shall contact DCWW to discuss the proposed connection to the public sewer.

The application form does not state the proposed surface water disposal method. No surface water drainage layout has been provided. Infiltration systems must be designed in accordance with BRE-Digest 365 and must not be situated within 5m of buildings or boundaries. A minimum of three infiltration tests shall be undertaken for each trial hole. It is unlikely that infiltration will work on either development site. There is a public surface water sewer located within the highway adjacent to the Brynmenyn development. The applicant shall contact DCWW to discuss

the proposed connection to the public sewer. There are several watercourses located within the development site at Bryncethin. Any access roads or compound areas on the solar farm will likely connect to the existing watercourses. An ordinary watercourse consent will be required for works or connections to the ordinary watercourses.

The solar farm site at Bryncethin is likely to generate significant surface water runoff during the construction phase. The ordinary watercourses on site connect to a watercourse classified as main river by NRW and any sediment/pollution runoff will likely generated NRW involvement during the construction phase. The applicant shall provide a construction management plan outlining how surface water runoff and sediment/pollution prevention control measures will be managed on site during the construction phase.

Green Hydrogen Production Facility – Brynmenyn: As the development footprint is over 100m², a sustainable drainage application will be required. Maintenance of the sustainable drainage features will remain with the applicant as landowner.

Solar Array – Bryncethin: As the development of access tracks and compound areas is likely to be over 100m², a sustainable drainage application will be required. Maintenance of the sustainable drainage features will remain with the applicant as landowner.

From 7 January 2019, new developments of at least two properties or over 100m² of construction area will require sustainable drainage to manage on-site surface water. The information provided confirms that the development would be more than 100m², therefore the applicant will be required to submit a sustainable drainage application form to the Bridgend SuDS Approving Body (SAB). The surface water drainage systems must be designed and built-in accordance with standards for sustainable drainage. These systems must be approved by the Bridgend SAB before construction work begins. The sustainable drainage application form shall be submitted before or alongside the planning application. The applicant is advised to contact the Bridgend SAB to discuss the drainage implications from the proposed development via the contact details within the link below (The sustainable drainage application form and supporting information required for the application can be accessed from the link below):

<https://www.bridgend.gov.uk/residents/recycling-waste-and-environment/environment/flooding/sustainable-drainage-systems/>

No surface water is allowed to discharge to the public highway.

No land drainage run-off will be permitted to discharge (either directly or indirectly) into the public sewerage system.

The applicant shall provide the following information to progress the planning/sustainable drainage application (if the application is progressed):

- Confirm foul and surface water disposal methods
- Provide foul and surface water drainage layouts
- Provide an agreement in principle from DCWW for foul and surface water (if required) disposal to the public sewer
- Provide hydraulic calculations to confirm the site does not flood during a 1 in 100yr + 30%CC event
- Submit an Environmental Permit to NRW (if required)
- Provide a construction management plan outlining how surface water runoff and sediment/pollution runoff will be managed during the construction phase
- Submit an ordinary watercourse consent for any works involving existing ordinary watercourses
- Provide infiltration tests in compliance with BRE-Digest 365, details of proposed soakaways and maintenance plan should infiltration be proposed
- Submit a Sustainable Drainage Application to the Bridgend SAB – SAB@bridgend.gov.uk (the applicant is advised to contact the Bridgend SAB prior to the formal submission to discuss the application should they proceed).

Please note the Pre-Application Consultation comments above have been provided as a guide only and shall not be taken as approval for the current drainage proposals. Additional comments may be identified once the formal planning/sustainable drainage application for the site has been received by the Land Drainage Team.

**Shared Regulatory Services –
Neighbourhood Services**

In terms of noise, the applicant would be required to submit a noise assessment with the application. The noise assessment must include the following:

- a background survey, including LA90 and LAeq parameters at locations representative of the nearest noise sensitive receptors for each site
- an assessment of the full range of noise sources for both sites in accordance with BS4142 e.g., for hydrogen plant site, there will be noise from plant, compressors, any blow off valves etc and for the solar plant, there could be noise from any transformers on site (this list is not exhaustive and the applicant will need to identify all noise sources at the development and make an assessment of them all), together with the applicable rating level
- An assessment of traffic noise generated by the development

- An assessment of construction noise and vibration impacts from any piling or vibration rollers in accordance with BS5228
- Inclusion of any necessary noise mitigation measures

The scope of the survey and background monitoring locations should be agreed with Shared Regulatory Services prior to the assessment being undertaken. The report shall predict the impact of the development on the closest residential /noise sensitive premises and the impact on the nearby more sensitive businesses premises such as Fur Indoors and some of the close enterprise type businesses as opposed to industrial premises.

If the planning application does not include a construction environmental management plan (CEMP), one will be requested as a planning condition. The CEMP shall contain a scheme for mitigation measures for construction noise, noise and vibration monitoring and operating hours (which must not be outside the following hours 8am-6pm Monday-Friday, 8am -1pm Saturdays with no working Sundays or Bank Holidays). It shall also include a scheme of dust mitigation measures and measures to prevent dust and mud from being tracked onto the highway.

The application should include an assessment of the lighting levels which should include the following information:

- A plan showing the location and orientation of the lights,
- lighting levels within the development site and predicted levels at the nearest residential receptor and upward sky glow upward light ratio, source intensity and building luminance (see The Institution of Lighting Engineers Guidance Notes for the Reduction of Obtrusive Light
- specify operational hours and mode of operation e.g., sensors etc
- contain mitigation measures to reduce light spillage beyond the site boundary and upward light spillage and mitigation measures to ensure that the lights are only operational between the agreed

**Shared Regulatory
Services – Environment
Team (Air Quality)**

The operation of the facility itself does not include sources of combustion that release pollutants. I believe the only gas released from the process is oxygen. From an air quality perspective, I have no concerns regarding the hydrogen production process and the effect on nearby receptors in relation to compliance with national air quality objectives.

Due to the nature of the development, in terms of its size and proximity to residential roads and houses, via the submission of an appropriate

air quality assessment (AQA) the applicant must consider the potential impacts on ambient air quality and the magnitude/ risk of these potential air quality impacts on local/current and future residents. Consideration of air quality impacts should be examined through the development stage and when the development is complete, focusing on dust emissions during the construction phase of the development and potential exposure of current/ future residents to traffic derived Nitrogen Dioxide (NO₂) & Particulate Matter (PM₁₀ & PM_{2.5}) following completion of the development.

Construction Phase

Due to the close proximity of residential dwellings to the proposed development it is considered best practise to adopt the principles stipulated in IAQM "Guidance on the assessment of dust from demolition and construction." The guidance provides a risk-based approach based on the potential dust emission magnitude of the site (small, medium, or large) and the sensitivity of the area to dust effects. The importance of professional judgment is noted throughout the guidance. The guidance recommends that once the risk class of the site has identified, the appropriate level of mitigation measures are implemented to ensure that the construction activities have no significant impacts. In accordance with the guidance, Chapter 6, Step 1, Box 1 highlights certain screening criteria which needs to be considered and if a development qualifies for an assessment. The document states "An assessment will normally be required where there is: a 'human receptor' within: - 350 m of the boundary of the site; or- 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s)." It is apparent that there are residential dwellings located in close proximity to the proposed site, therefore satisfying the 'human receptor' criteria stipulated in the cited guidance and the need for a detailed air quality appraisal in the form of a dust assessment to be produced.

Operational Phase

An Air Quality Assessment (AQA) must be undertaken to ascertain the potential impacts for existing residents close to roads used for the proposed development. Based on best practise guidance the applicant must determine whether the number of vehicle movements generated by the development will pose a detrimental impact to AIR quality in the area and therefore generate concerns for public health.

The AQA should use detailed dispersion modelling to examine projected air quality levels for traffic derived Nitrogen Dioxide (NO₂) and Particulate Matter (PM₁₀) at the necessary locations. The assessment shall consider the potential exposure of current/ future local residents for the proposed year of opening. Should the assessment indicate that

current nearby residents a will be made vulnerable to poor air quality then appropriate mitigation measures must be proposed and approved by the Local Planning Authority. The applicant will be expected to provide evidence that any implemented mitigation measures would alleviate any poor air quality levels expected. These mitigation measures shall be implemented to the satisfaction of the Local Planning Authority prior to beneficial occupation.

As outlined in Local Air Quality Management (LAQM) Technical Guidance TG16, April 2021, examples of where the air quality objectives should apply are detailed in Box 1.1. Based on the detailed criteria, projected levels of traffic derived emissions (NO₂ & PM₁₀) must be quantified, considering both the short term and long-term air quality objectives. The Air Quality Assessment should look to focus on the national annual mean (40µg/m³) & 1- hour mean objective for NO₂ (200µg/m³ not to be exceeded more than 18 times a year) and annual mean (40µg/m³) & 24- hour mean objective for PM₁₀ (50µg/m³ not to be exceeded more than 35 times a year).

It would be of best practise for an Air Quality Scope of Works to be agreed between the LPA and applicant. Therefore, please can the applicant look to submit for approval a proposed scope of work and methodology for the assessment of air quality.

**Shared Regulatory
Services – Environment
Team (Contaminated
Land)**

Site 1 (Brynmenyn)

Records indicate former tanks in the north-west of the site. The site is within the coalfield consultation area and seams and mine workings are recorded to the south of the site but the extent of the effect of mining legacy issues on the site itself is not known.

Site 2 (Bryncethin)

Records indicate the historical brickworks and clay pits in the north of the site. It is understood that the claypits were subsequently infilled as part of a land reclamation scheme c.1992 but the details of the scheme and the nature of the infill is not known.

The site is within the coalfield consultation area and seams and mine workings are recorded across the site, with a former colliery and associated infrastructure (shafts, reservoir) in the south. The extent of the effect of mining legacy issues is not known.

The applicant will need to undertake detailed risk assessments for both sites in line with current guidance. These will need to determine the nature and extent of contamination, mining legacy issues, ground gas (from infilling and/or mining) and their potential impact on human health and the environment, both during and on completion of the project. Where risks are identified, proposals will need to be submitted in relation

to the mitigation/remediation necessary to ensure the site is developed safely and made suitable for use.

Should there be any importation of soils, or any site won recycled material, or materials imported as part of the construction of the development, then it must be demonstrated that they are suitable for the end use. This is to prevent the introduction or recycling of materials containing chemical or other potential contaminants which may give rise to potential risks to human health and the environment for the proposed end use.

APPRAISAL

Based on the information available, a review of both local and national policy and the comments received above, the key considerations in the assessment of any future application can be summarised as follows:

Green Hydrogen Production Facility – Brynmenyn

- The implications of the traffic generated by the development on important transport corridors that serve the site and how the development will promote safe, sustainable, and healthy forms of transport links
 - Impacts of the development on the living conditions and well-being of the local community with reference to the following:
 - Visual impact – ensuring that the scale and size of the development respects its setting – much will depend on matters such as eventual height of any stacks, scale of buildings and plant. An assessment on Landscape and Visual Amenity may be required. Retaining existing areas of trees and hedgerows will be important to minimise any impacts.
 - Avoiding or minimising noise and air pollution – the application will need to assess the impacts and demonstrate how adequate mitigation will be provided to safeguard local amenity
 - Health and safety – residents may perceive that such a facility, with the storage of hydrogen will pose a health and safety risk. This must be considered fully in the application. The pre-application consultation process is an opportunity to address this issue early in the planning process.
- Demonstrating that the operation on site will be compatible with the existing employment uses and will not prejudice existing operations
- All reasonable steps must be taken to maintain and enhance biodiversity – this means the development should not cause any significant loss of habitats or populations of species,

locally or nationally and must provide a net benefit for biodiversity – minimising the impacts of the development on the SINC is important.

- Sustainable drainage systems should be incorporated into the development to enable surface water to be managed close to or at source, where possible and the development must not increase flood risk on and off the development site itself.
- Understanding the site conditions to ensure that contamination, Coal Mining Legacy etc. have been fully considered in the design of the scheme and that remedial works will not have any significant impact on the surrounding land uses

Solar Array – Bryncethin

- Reconciling the development against the national and local policies that protect the countryside and whether the loss of the land for its identified purposes in the Bridgend Local Development Plan, namely an outdoor events area has any impact on the Council's objective of promoting tourism through regeneration
- Assessing the effect of the solar array on the character and appearance of the surrounding landscape in respect of its location, form, and scale, and on the living conditions of nearby residents with regard to outlook – the required Landscape and Visual Impact Assessment should inform the design and layout of the solar array and measures to mitigate the landscape and visual impacts
- The development may affect 'common land'. Any loss may be considered contrary to national policy and would require the consent of Welsh Ministers. Avoiding or minimising the amount of development on common land is recommended.
- As with the hydrogen plant, all reasonable steps must be taken to maintain and enhance biodiversity – this means the development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity – minimising the impacts of the development on the SINC is important.
- Sustainable drainage systems should be incorporated into the development to enable surface water to be managed close to or at source, where possible and the development must not increase flood risk on and off the development site itself. A comprehensive construction management plan outlining how surface water runoff and sediment/pollution prevention control measures will be managed on site during the construction phases should be submitted with the application
- Again, understanding the site conditions to ensure that contamination, Coal Mining Legacy etc. have been fully considered in the design of the scheme is important, albeit it is noted that solar arrays generally less intrusive with limited foundations.

CONCLUSION

At this stage in the process and without detailed consideration of the environmental effects of the proposal, it is difficult to offer any substantive planning advice. Critical to the future success of the application will be a demonstration that the project is compliant with national and local planning policies. Where environmental impacts are identified, appropriate levels of mitigation and compensatory works will be delivered to limit the impacts of the development on the environment and the local community are minimised. It is the role of the planning authority to exercise its judgement and consider many and often conflicting issues to decide whether a development scheme is acceptable. The Council does however acknowledge the role of emerging low carbon technologies, such as green hydrogen in delivering renewable energy to provide both heating and transport in addition to power.

Our aim is to enable and promote high quality development and we were encouraged by your willingness to work with the Council to achieve this objective. Collaborative working between yourselves as developers, the Council and the community should continue throughout the planning process.

I trust that the above information is sufficient at this time, but should you need to discuss the proposal, please do not hesitate to contact either the Development and Building Control Manager, Rhodri Davies or the case officer, Phil Thomas.

Yours sincerely,

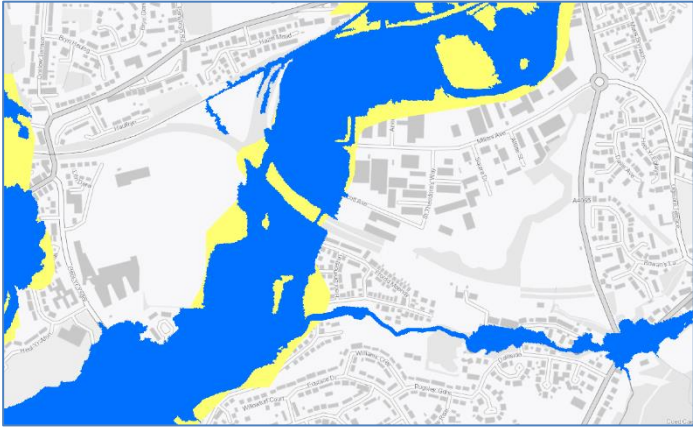
A handwritten signature in black ink that reads "Jonathan Parsons". The signature is written in a cursive style with a large initial 'J'.

Mr. Jonathan Parsons
Group Manager Planning & Development Services

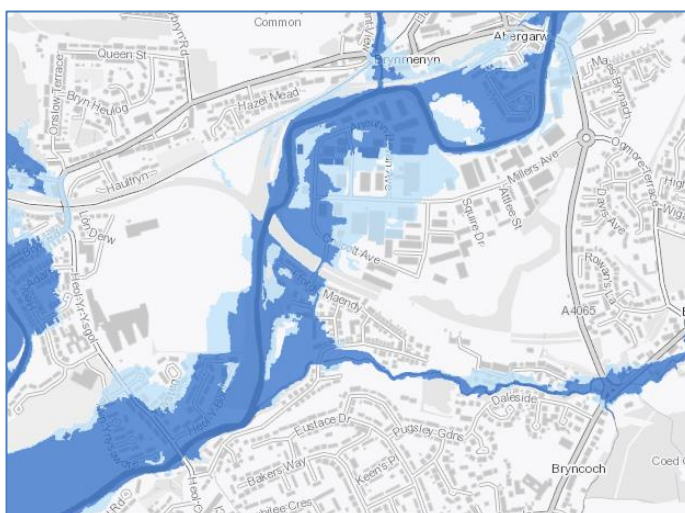
APPENDIX A

Green Hydrogen Production Facility - Brynmenyn

PLANNING HISTORY	P/97/427/FUL – Extension to an existing industrial building on 2 Atlee Street, Brynmenyn Industrial Estate. Although the application site appears to include part of the enquiry site, the extension was to the existing building within the confines of the industrial estate. The consent was granted, and the works have been implemented.
LAND USE CONSTRAINTS:	COMMENTS:
Designated Sites (Biodiversity)	<p>The site is located within the Tyn-y-Coed Farm SINC.</p> <p>Policy ENV4 requires development within or adjacent to SINC to be compatible with the nature conservation or scientific interest of the area, whilst promoting their educational role. Developments which would have an adverse impact on these sites will not be permitted unless the benefits associated with the development can be demonstrated to outweigh the harm and/or the harm can be reduced or removed by appropriate mitigation and/or compensation measures.</p> <p>Requirements: Under certain circumstances, a Phase 1 Habitat Survey would be required to record habitat types on site, assessing the potential for protected or otherwise notable species present and assessing the key processes influencing the ecology of the site. It is understood however that managed clearance works have been undertaken. There may however be a requirement, through the planning permission to secure compensation for the clearance works, possibly in the form of habitat creation or the or the provision of long-term management arrangements to enhance existing habitats and deliver a net benefit for biodiversity. A full ecological assessment before habitat creation or restoration starts would be required.</p> <p>(Reference: Policy SP2, SP4, & ENV6)</p>
Tree Preservation Orders	<p>Tree Preservation Orders exist on site.</p> <p>(1990) OBC No 21 (T156)</p>

	<p>Any hedgerows and trees that form the site boundary should be accommodated as part of any future development. The trees would need to be assessed under BS5837:2012 Trees in relation to design, demolition and construction – Recommendations.</p> <p>(Reference: Policy SP2, SP4, & ENV6)</p>
Conservation Area	<p>Development is not located within a Conservation Area</p> <p>(Reference: Policy SP2, SP5, & ENV8)</p>
Listed Building	<p>No listed buildings/structures are affected</p> <p>(Reference: Policy SP2, SP5, & ENV8)</p>
Ancient Monuments	<p>No ancient monuments identified near site</p> <p>(Reference: Policy SP2, SP5, & ENV8)</p>
Heritage Coast	<p>Not applicable</p> <p>(Reference: Policy SP2, SP5, & ENV8)</p>
Historic Landscapes (Parks and Gardens)	<p>Not applicable</p> <p>(Reference: Policy SP2, SP5, & ENV8)</p>
River/Coastal/Surface Water Flood Zones	<p>Based on the current Development Advice Maps, (extract below) the site of the Green Hydrogen Production Facility site is not at risk of river and/or surface water flooding.</p>  <p>Should the scheme include a hydrogen pipeline to Coleg Cymunedol Y Dderwen, its current line will pass through the C2 flood zone. It is recommended that pre-application discussions take place with Natural Resources Wales (NRW) to establish whether a Flood Consequence Assessment would be required to accompany any future application.</p>

Whilst the areas at risk of flooding have been modified on the Flood Map for Planning (Wales), the line appears to cross Flood Zones 2 & 3 – see extract below:



The Flood Map also identifies flood zones associated with surface water and small watercourse on the periphery of the site – see plan below:

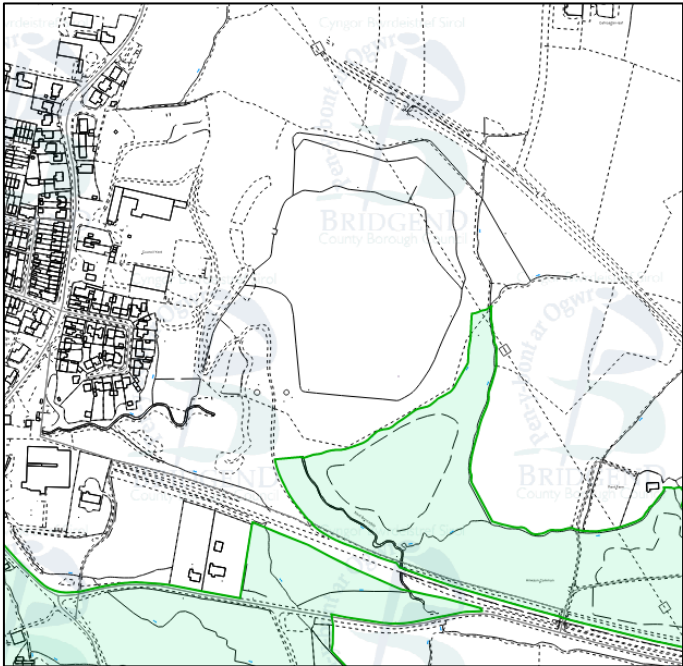
(Reference: Policy SP2)

<p>Coal Mining Risk/Ground Conditions</p>	<p>No coal mining risk has been identified (located in Low-Risk Area) but site investigations should be undertaken to identify any possible contamination.</p> <p>(Reference: Policy SP2 & ENV13)</p>
<p>Safeguarding Zone: Quarry</p>	<p>Not applicable</p>
<p>Landfill Site (Safety Zone)</p>	<p>Not applicable</p>
<p>Rights of Way</p>	<p>No rights of way affected</p>
<p>Common Land</p>	<p>Not affected by development</p>
<p>Gas Pipeline</p>	<p>No gas pipelines indicated on Council's Mapping Systems</p>

APPENDIX B

Solar Array – Bryncethin

<p>PLANNING HISTORY</p>	<p>Application: P/98/715/MIN – Conditional consent was granted for the drilling of exploratory boreholes, ground stimulation and testing of coal-bed methane as flows on 5th October 1998.</p>
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	<p>Application P/14/194/FUL – Conditional consent was granted for the formation of 3 rugby fields on 6th March 2015.</p> <p>Application P/21/494/FUL has been submitted for the provision of 3 rugby fields – a renewal of application P/14/194/FUL. The application remains undetermined.</p>
LAND USE CONSTRAINTS:	COMMENTS:
Designated Sites (Biodiversity)	<p>Part of the site is covered by the Pant Farm/Hirwaun Common SINC, an important habitat comprising of acidic marshy grassland/continuous bracken/scattered scrub – see plan below:</p>  <p>Requirements: A Phase 1 Habitat Survey and Review of SINC will be required.</p> <p>This will need to record habitat types on site, assessing the potential for protected or otherwise notable species present and assessing the key processes influencing the ecology of the site. It is expected that the Phase 1 survey will record information about:</p> <ul style="list-style-type: none"> • Habitat types and main plant communities • Features of potential importance for nature conservation including hedges, veteran trees etc. • Presence, or potential for presence, of legally protected species, principal species of biodiversity importance, or species of local conservation concern • Requirements for additional surveys and timing for those surveys • Presence of invasive/problem species, such as Japanese Knotweed, Himalayan Balsam, Rhododendron ponticum • Processes, natural or otherwise, that influence biodiversity within the zone of influence; and • Opportunities for enhancement. <p>(Reference: Policy SP2, SP4, & ENV6)</p>

<p>Tree Preservation Orders</p>	<p>No Tree Preservation Orders exist on site. However, hedgerows and trees form the site boundary and should be accommodated as part of any future development. The trees would need to be assessed under BS5837:2012 Trees in relation to design, demolition and construction – Recommendations.</p> <p>(Reference: Policy SP2, SP4, & ENV6)</p>
<p>Conservation Area</p>	<p>Development is not located within a Conservation Area</p>
<p>Listed Building</p>	<p>No listed buildings/structures are affected.</p>
<p>Ancient Monuments</p>	<p>No ancient monuments identified near site</p>
<p>Heritage Coast</p>	<p>Not applicable</p>
<p>Historic Landscapes (Parks and Gardens)</p>	<p>Not applicable</p>
<p>River/Coastal/Surface Water Flood Zones</p>	<p>Based on the Development Advice Maps, part of the site is at risk of river and/or surface water flooding. It is located in the C2 zone, (see extract plan below) described in Welsh Government's Technical Advice Note on Flooding (2004) as areas of the floodplain without significant flood defence infrastructure.</p> <div data-bbox="788 1167 1358 1765" data-label="Image"> </div> <p>Only less vulnerable development should be considered subject to application of justification test, including acceptability of consequences. In these circumstances, I would recommend that you seek pre-application advice directly from Natural Resources Wales. It is likely that a Flood Consequence Assessment will be required, the findings of which should inform not only the site layout but potentially the acceptability of the development.</p>

An extract from the Flood Map for Wales is reproduced below:



(Reference: Policy SP2)

Coal Mining Risk/Ground Conditions

Parts of the site are classified as High-Risk Areas associated with Coal Mining Legacy – see plan below. A Coal Mining Risk Assessment and Ground Investigation Report will be required. Comments have also been provided by the Environment Team in SRS as to the possibility of contamination on site.



(Reference: Policy SP2 & ENV13)

Safeguarding Zone: Quarry

Not applicable

(Reference: Policy SP6, ENV13)

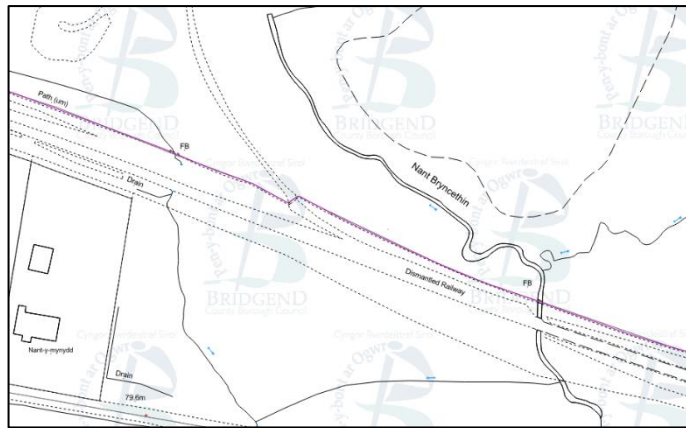
Landfill Site (Safety Zone)

Not applicable

(Reference: Policy SP6, ENV13)

Rights of Way

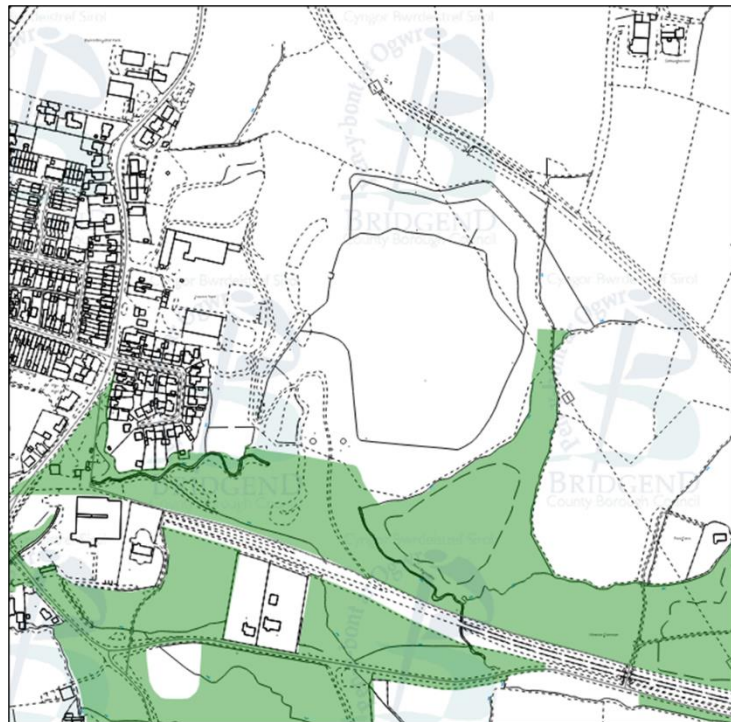
A Public Right of Way crosses the southern boundary of the site (PROW 12 St Brides Minor). Discussion with Rights of Way Team regarding its protection/diversion is recommended.



(Reference: Policy SP2, SP3 & PLA9)

Common Land

An area of Common Land is located on the southern and eastern edges of the site – see extract plan below. Part of the Cefn Hirgoed and Hirwaun Common – C21 – Contact 01656 643110.

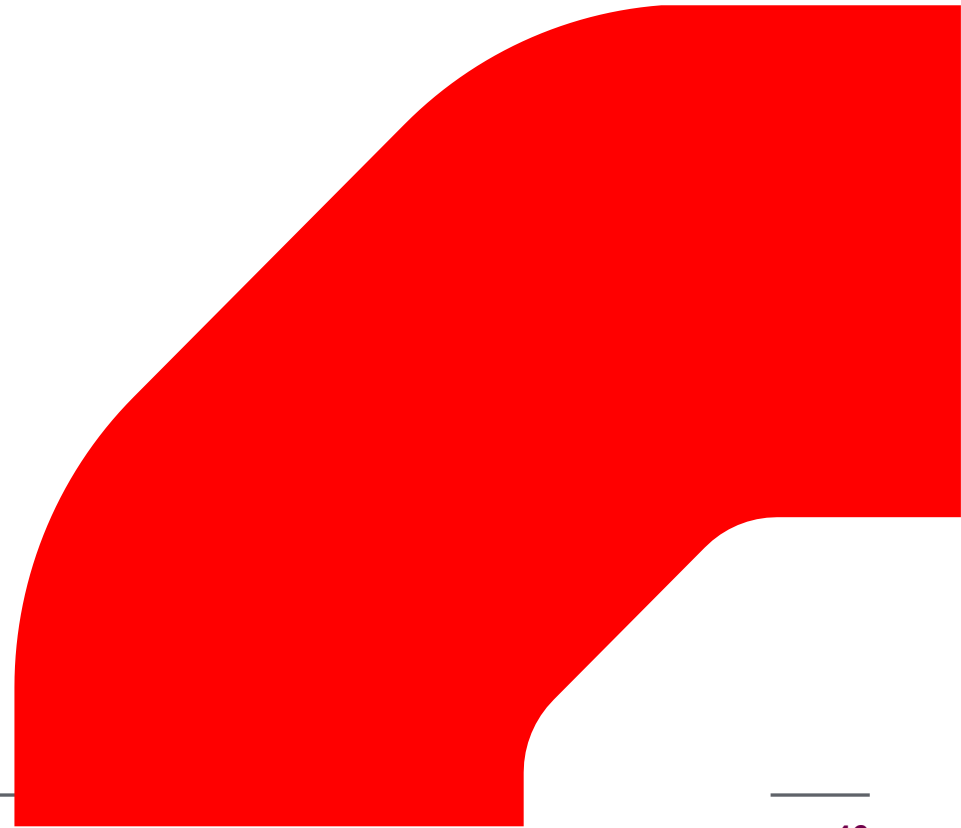


National policy confirms that Common land is a finite resource and should not be developed unnecessarily. It is important in agricultural terms and valued for its leisure and environmental interests, particularly its significant role in habitat conservation. Access to it should not be prevented or impeded unnecessarily to ensure its proper management. The role and wider value of common land should be explored through Green Infrastructure Assessments. In addition to planning permission, certain works which prevent or impede access to or over common land or

	involve new resurfacing require consent from Welsh Ministers. Where planning permission is being granted to develop on common land, an advisory note should be attached stating that the consent of the Welsh Ministers may also be required under common land legislation.
Gas Pipeline	No gas pipelines indicated on Council's Mapping Systems
Overhead Power Lines	National Grid HV Overhead line crosses part of the site

Appendix B.

EIA Screening Opinion



Cyngor Bwrdeistref Sirol Pen-y-bont ar Ogwr Bridgend County Borough Council



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Ein cyf / Our ref: **P/22/572/SOR**

Dyddiad / Date: **15 September 2022**

Email: Damian.Barry@rpsgroup.com

By Email

Dear Sir,

APPLICATION NO.: P/22/572/SOR
LOCATION: LAND AT BRYNMENYN AND BRYNCETHIN CF32 9TX
PROPOSAL: REQUEST FOR A SCREENING OPINION: BRIDGEND GREEN HYDROGEN PLANT - HYDROGEN PRODUCTION ELECTROLYSIS PLANT, TOGETHER WITH PV SOLAR ARRAY AND ASSOCIATED PRIVATE WIRE CONNECTION AND PIPELINE OFF-TAKE

I refer to your screening opinion request submission.

The request for the Local Planning Authority to adopt a 'Screening Opinion' on the above development has been assessed against Schedules 1, 2, 3, to The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017.

On the basis of the information available at this time and for the purposes of this assessment only, the development is unlikely to have a significant environmental effect and an EIA is not required.

This opinion has been reached on the following basis:

A list of projects for which EIA may be required is set out in Schedules 1 and 2 of the Regulations. Schedule 1 developments require EIA to be undertaken in all cases.

The only category of development within Schedule 1 that could potentially be applicable is (6) (b):

6. Integrated chemical installations, that is to say, installations for the manufacture on an industrial scale of substances using chemical conversion processes, in which several units are juxtaposed and are functionally linked to one another, and which are

...

(b) for the production of basic inorganic chemicals.

Hydrogen is included among the "inorganic chemicals" listed in Part A1, Section 4.2 of the Environmental Permitting (England and Wales) Regulations 2016. The specific tests of 6 (b) are listed as follows:

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- a. whether hydrogen and oxygen are basic inorganic chemicals
- b. whether the manufacturing of hydrogen and oxygen is via chemical a conversion process
- c. whether the manufacture is on an industrial scale; and
- d. whether it is in units that are juxtaposed or functionally linked such that they form an integrated chemical installation.

Hydrogen and oxygen are basic inorganic chemicals. The applicant's consultant indicates that the conversion of water to hydrogen and oxygen in an electrolysis cell is a chemical rather than physical conversion process with a chemical reaction occurring to split $2 \text{H}_2\text{O}$ into $2 \text{H}_2 + \text{O}_2$, as opposed to a physical process such as cryogenic separation of atmospheric gases. It is suggested that electrolysis is simple in comparison to the complex process involving linkages and intermediaries that is envisaged as constituting an "integrated chemical installation" in the Directive and associated guidance and it does not involve use or production of chemicals with potential for environmental harm. In the consultant's opinion the hydrogen production facility does not fall within Schedule 1 of the EIA Regulations. This view appears to be supported by the precedent of decisions made by planning authorities for other hydrogen production facilities in the UK. A search of planning applications or EIA screening/scoping applications for hydrogen developments has been undertaken and the results have been submitted as part of this SOR submission. None of the developments identified has been deemed to be Schedule 1 development. In all but two cases, the developments were screened out of EIA. One development was screened in due to it forming part of a larger EIA solar farm proposal. In the other case, an ES was submitted voluntarily by the developer.

Based on the information before the Council, it is accepted that the development does not fall within Schedule 1 of the EIA Regulations.

Schedule 2 development is defined by the EIA Regulations as development of a description mentioned in Column 1 of the table in Schedule 2 where:

- any part of that development is to be carried out in a sensitive area; or
- any applicable threshold or criterion in the corresponding part of Column 2 of that table is respectively exceeded or met in relation to that development.

The proposed development is not within a sensitive area as defined by the EIA Regulations and therefore, the proposed development does not meet the first criterion.

Turning to the categories within Schedule 2, the applicant has identified the following as relevant:

(3) (a) Industrial installations for the production of electricity, steam, and hot water (unless included in Schedule 1). The applicable threshold criteria are as follows: The area of the development exceeds 0.5 hectare.

(3) (b) Industrial installations for carrying gas, steam, and hot water. The applicable threshold criteria are as follows: The area of the works exceeds 1 hectare.

(6) (a) Treatment of intermediate products and production of chemicals. The applicable

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threshold criteria are as follows: The area of new floorspace exceeds 1,000 square metres.

(6) (c) Storage facilities for petroleum, petrochemical, and chemical products. The applicable threshold criteria are as follows:

- (i) The area of any new building or structure exceeds 0.05 hectare; or
- (ii) more than 200 tonnes of petroleum, petrochemical or chemical products is to be stored at any one time

(10) (a) Industrial estate development projects. The applicable threshold criteria are as follows: The area of the development exceeds 5 hectares.

(10) (k) Oil and gas pipeline installations and pipelines for the transport of carbon dioxide streams for the purposes of geological storage (unless included in Schedule 1). The applicable threshold criteria are as follows:

- (i) The area of the works exceeds 1 hectare; or
- (ii) in the case of a gas pipeline, the installation has a design operating pressure exceeding 7 bar gauge

The consultant suggests that for the hydrogen plant, the most relevant category in Schedule 2 is (6) (a) Treatment of intermediate products and production of chemicals. The statement submitted with this SOR confirms that the proposed development does not involve multiple stages of processing/treatment with intermediate products but it is a facility for the production of chemicals. Schedule 2 (6) (a) sets the following threshold to define Schedule 2 development: "The area of new floorspace exceeds 1,000 square metres." The proposed development would not exceed this threshold.

Turning to other forms of development listed in Schedule 2, it is suggested that the criteria should be applied broadly in which case a proposal might be Schedule 2 development if any of the following also applies:

- the works area for any export pipeline from the facility exceeds 1 hectare (3b; 10k)
- any storage building for hydrogen (or oxygen) exceeds 500sq meters (c.22 x 22m) (6c)
- the area of the development exceeds 5 hectares (10a)
- hydrogen pipelines from the site are designed at operating pressure exceeding 7 bar gauge (10k).

The consultant confirms that both project sites equate to around 9 hectares in aggregate with the PV solar array likely to occupy around 8 hectares of the 22 hectare site. As such and yet only if one considers the scheme to fall under 10(a) which is questionable, could the scheme be considered to constitute Schedule 2 development under the EIA Regulations.

The submission has not considered however whether the PV solar array alone would constitute Schedule 2 development under the EIA Regulations. Part 3 (a) of Schedule 2 establishes an applicable threshold of 0.5 hectare for an industrial installation producing electricity. The array would exceed that figure so the project as a whole would constitute Schedule 2 development.

Schedule 2 development does not however require EIA to be undertaken in all cases. The

development in question must be considered against the criteria provided in Schedule 3 of the Regulations to determine whether significant effects on the environment are likely. Schedule 3 includes the characteristics and location of the development and the characteristics of the potential impact. That assessment is as follows:

1. Characteristics of the Development

a. The size and design of the development:

Will construction, operation or decommissioning of the Project involve actions which will cause physical changes in the locality (topography, land use, changes in waterbodies, etc.)?

The proposed development comprises a single small building, electrolysis equipment and cooling plant, pipework and an underground cable for the electrical connection to the associated off-site PV solar array. It would also include an underground hydrogen export pipeline of around 1 km in length. It would generate minimal staff traffic in operation and would use a private access road. The majority of equipment and buildings would be expected to be less than 4m in height with the tallest structure (eg atmospheric vents) typically being less than 10m in height. The submission suggests that landscaping and habitat creation will be included in the development proposals to compensate for any loss of habitat on the site. It will have no pollutant discharges to air or water. The main resource used is fresh water, anticipated to be supplied by Dŵr Cymru Welsh Water. No new river or groundwater abstraction is required. The wastes are excess oxygen and water not consumed in the electrolysis process which will be discharged to sewer.

Comment: The development will *cause physical changes in the locality* with the land use changing from agriculture. As stated above, the site covers an area of approximately 0.9 Ha and therefore, it exceeds the Schedule 2 Part 3(a) threshold for potentially requiring an EIA (0.5 Ha). However, overall the characteristics of the development design and size are not considered to be such that it is likely to give rise to significant environmental effects.

b. The cumulation with other existing development and/or approved development:

Are there any other factors which should be considered such as:

- **consequential development which could lead to environmental effects?**
- **the potential for cumulative impacts with other existing or planned activities in the locality?**
- **any plans for future land uses on or around the location which could be affected by the project?**
- **transfrontier impacts?**

Comment: There are no constructed or consented major development projects in the vicinity of the proposed development with the potential for cumulative effects or that introduce new sensitive receptors closer to the proposed hydrogen plant. The Council is however aware of a Development of National Significance (DNS) for a solar photovoltaic electricity generating station with an installed generation capacity of circa 40 MW on land west of Heol y Cyw which is 1km to the east of the site subject of this Screening Opinion. The landscape and visual

impacts of the developments cumulatively could result in significant effects. It is understood that the developer of the DNS project has indicated that the development may have significant effects on the environment by virtue of its size, nature and location. Consequently, a Screening Opinion has not been sought and instead it has been decided to proceed to Scoping the Environmental Statement ('ES') that will accompany the future planning application. On the basis that this is not an existing or consented scheme, it is questionable whether it can be included in the assessment of cumulative impacts.

c. The use of natural resources in particular land, soil, water, and biodiversity:

Will construction or operation of the Project use natural resources such as land, water, materials, or energy, especially any resources which are non-renewable or in short supply?

Comment: Yes, based on the land take and the materials required to construct the development however, the scale of resource use is unlikely to be significant in terms of the EIA regulations.

d. The production of waste:

Will the Project produce solid wastes during construction or operation or decommissioning?

In operation, the proposed development would generate wastewater from the water treatment and purification stage and waste oxygen from the hydrogen production. Construction waste would be re-used and recycled where possible. The overall objective would be to reduce the amount of waste generated during construction and to sustainably manage any waste that is generated using waste management facilities in closest proximity to the site where possible. There will be no demolition waste.

Comment: No significant effect.

e. Pollution and nuisances

Will the Project involve use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health?

Will the Project cause noise and vibration or release of light, heat energy or electromagnetic radiation?

Will the Project release pollutants or any hazardous, toxic, or noxious substances to air, or lead to risks of contamination of land or water (including surface waters, groundwater, coastal waters, or the sea)?

Air Quality: Dust from construction work will not cause significant effects due to the distance of much more than 350m to the nearest dust-sensitive residential receptors and the area within 350 is considered to be of low sensitivity to dust impacts as defined in IAQM guidance. Good

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practice dust control measures as recommended by IAQM will be implemented during construction and management through a Code of Construction Practice (CoCP) and method statements comprising a Construction Environmental Management Plan (CEMP) will be implemented.

The effects on air quality from the type and scale of construction machinery envisaged are expected to be negligible and not significant.

In operation, the hydrogen plant will have no combustion process or other sources of air pollutant emissions, and hence no effect on air quality. It will discharge oxygen from the electrolysis process through vent stacks. Oxygen is not an air pollutant but must be safely dispersed through vent stacks of suitable height to avoid fire risk due to increased oxygen concentration at the site.

Operational traffic will be negligible and the vehicles are already circulating on the existing local network. There is no potential for likely significant effects from operational traffic-related air pollutants as the change in traffic flow would be well below the EPUK & IAQM guidance thresholds for assessment.

Consultation Responses: Colleagues in SRS have noted that the operation of the facility will not include sources of combustion that release pollutants. I believe the only gas released from the process is oxygen. This raises no concerns in terms of air quality.

On the basis that the use will generate additional traffic to the site an Air Quality Assessment (AQA) will be required and will need to consider the potential impacts on ambient air quality and the magnitude/risk of these potential air quality impacts on local/current and future residents. Consideration of air quality impacts should be examined through the development stage and when the development is complete, focusing on dust emissions during the construction phase of the development and potential exposure of current/future residents to traffic derived Nitrogen Dioxide (NO₂) & Particulate Matter (PM₁₀ & PM_{2.5}) following completion of the development. Should the assessment indicate that current nearby residents will be made vulnerable to poor air quality then appropriate mitigation measures must be proposed and approved by the Local Planning Authority. The applicant will be expected to provide evidence that any implemented mitigation measures would alleviate any poor air quality levels expected. These mitigation measures shall be implemented to the satisfaction of the Local Planning Authority prior to beneficial occupation.

Comments: At this stage it is not possible to determine the impacts of construction and operational traffic on air quality. Those impacts are however likely to be local and mitigated through measures that will be agreed and secured by any future planning permission.

Noise and Vibration: The supporting statement indicates that during construction, noise will be generated by construction plant and traffic within the site and its construction access route. The applicant proposes that the construction works for the hydrogen plant will be subject to good practice environmental management secured through a CoCP and CEMP and construction noise limit to be set. With these measures in place, it is predicated there will be no significant adverse effects from construction noise are considered likely.

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Due to the distance of residential receptors and the rapid attenuation of vibration in the ground, no significant vibration effects are likely to be possible.

In operation, it is indicated that the main noise sources on the site would be the compressors and the external fin-fan coolers. It is suggested that with appropriate design to attenuate noise from plant and the distance to the nearest residential noise-sensitive receptors, significant noise effects from the hydrogen plant itself can be avoided. Based on an initial consideration of the likely noise sources on site together with background and other cumulative noise sources the following indicative noise levels for the hydrogen plant would be targeted.

- Electrolysis enclosure: noise emission of 80 dB LwA
- Fin-fan coolers: noise emission of 80 dB LwA per unit
- Compression plant enclosure: noise emission of 80 dB LwA

The statement suggests that with noise attenuation measures in the hydrogen plant in place, no significant adverse effects individually or cumulatively are considered likely.

Consultation Responses: Colleagues in SRS have confirmed that the applicant would be required to submit a noise assessment with the application including a review of background noise levels, road traffic noise associated with the development and an assessment of the full range of noise sources for both sites (hydrogen plant and PV solar array) in accordance with BS4142.

Comment: Based on the information before the Council at this time, no significant effects on soundscape during the construction and operation of the projects are considered likely.

f. The risk of major accidents and/or disasters

Will there be any risk of accidents during construction or operation of the Project which could affect human health or the environment?

The EIA screening report considers this matter in some detail:

'The potentially relevant accidents or disasters are:

- Fire or explosion risk from hydrogen produced and stored on the hydrogen plant site or in the pipeline
- Fire risk from oxygen released by the electrolysis process.

Hydrogen storage - Hydrogen is a flammable gas and could pose a fire or explosion risk from storage and pipeline transport within the hydrogen plant and in the export pipeline. The applicant does not propose significant hydrogen storage within the hydrogen plant. Small above-ground balancing/buffer tanks for short term hydrogen storage will be constructed within the hydrogen plant site. These tanks and pipeline connection will have a total capacity of no more than 5t hydrogen storage, below the lower tier threshold for applicability of the COMAH (Control of Major Accident Hazards) Regulations.

Hydrogen inventory comprising the 'line pack' of the hydrogen export pipeline would also be

unlikely to exceed the 5t COMAH threshold for a c.1 km pipeline length and assuming a maximum operating pressure of below 2 bar. This would be confirmed in the planning application.

Hydrogen storage is likely to be above the 2t threshold for requiring a Hazardous Substances Consent (HSC) in consultation with the Health and Safety Executive. The application for this consent will detail the measures for safe storage of hydrogen which will be regulated by the Council under the HSC. Hydrogen venting may be considered though not as part of normal operations (abnormal/emergency shutdown scenario and/or purging of equipment for maintenance).

It is suggested that no significant fire or explosion risk from hydrogen storage is therefore considered likely.

Flood risk - The hydrogen plant site is within Flood Zone A, considered to be at little or no risk of fluvial or coastal/tidal flooding as designated in the Development Advice Maps within Technical Advice Note 15. The submitted report notes that the industrial estate to the north is partially within Flood Zone C2/B. A revised TAN15 is due to be implemented in June 2023 which will be supported by the new Flood Map for Planning. BCBC will pay due consideration to the replacement TAN in its decision taking and so an awareness of the context under it is important. On the proposed new flood map the site is not identified as being at risk of flooding. Roads around it are identified as being at risk of surface water flooding (Zone 3) as is a small linear area to the immediate north-east of the site between the Industrial Estate and the greenfield land and the development will need to be set back from such areas at risk and will need to be subject to Flood Consequence Assessment'.

Comment: Part of the PV array site is located in the C2 zone (southern edge) although it is unlikely that that panels will occupy this part of the site. The risk to flooding will be assessed as part of any future application but the impacts of the development are unlikely to represent a danger to existing residents and communities. In summary, no significant effects on flood risk (to the development or to off-site receptors) or hydrology are considered likely.

g. The risk to human health

Will there be any risk to human health during the construction and/or operation of the development

The potential for significant effects through environmental pathways relevant to human population and health impacts has been considered in the submitted documentation. No likely significant effects through these pathways have been identified. The hydrogen plant site would be located at a distance from residential receptors with existing or planned development between.

During construction the temporary employment opportunities and local supply chain spending can have a beneficial effect on socio-economic health pathways but this is considered to be minor and not significant and similarly, the small number of long-term specialist operator and maintenance jobs created in operation are not likely to have significant population or health

effects. The proposed development will not affect access to green space or recreation.

Comment: The development will not give rise to any uncontrolled risks to human health and therefore, any effects are unlikely to be significant for the purposes of this assessment.

2. Location of the Development

a. The existing and approved use

- (i) **Will the Project result in social changes, for example in demography, traditional lifestyles, employment?**

Comment: No such changes are noted. The hydrogen plant will provide some additional employment in accordance with the site's allocation in the Bridgend Local Development Plan

- (ii) **Are there any routes or facilities on or around the location, which are used by the public for access to recreation or other facilities, which could be affected by the project?**

Comment: A Public Right of Way passes along the southern boundary of the PV solar array site. It may be necessary to divert or temporarily stop up during the construction works. No other impacts have been identified at this stage.

- (iii) **Is the project located in a previously undeveloped area where there will be a loss of greenfield land?**

Comment: Both sites will result in the loss of greenfield land. The Hydrogen Plant will however occupy land allocated for employment purposes. The PV array site is previously restored land which is currently identified for a new tourism related facility. The loss of these greenfield sites has no wider environmental affect and it is expected that every effort will be made to retain natural screening in the form of trees and hedgerows and design the development to minimise its impact on landscape character.

- (iv) **Are there any areas on or around the location occupied by land uses which could be affected by the project, particularly sensitive land uses e.g., hospitals, schools, places of worship, community facilities?**

Comment: Schools are located within the vicinity of both sites but it is unlikely that the projects will have any significant impact on their operations. Measures can be secured through any future planning permission to control the routes of construction traffic during the start and finish of schools and to mitigate any impacts on soundscape and air quality.

b. The relative abundance, availability, quality, and regenerative capacity of natural resources in the area and its underground

- (i) **Are there any areas on or around the location which contain important, high quality or scarce resources e.g., groundwater, surface waters, forestry, agriculture, fisheries, tourism, minerals, which could be affected by the project?**

The supporting statement confirms that the Brynmenyn site is land cleared for development and prior to that was greenfield/vegetated land. As the site is undeveloped, the potential for any existing ground contamination that could be mobilised during construction is low. During construction good practice measures for runoff management and materials storage to avoid spillages would be implemented through a CoCP and CEMP. Significant effects on or due to ground contamination during construction are not considered likely.

The Bryncethin site is previously developed land that has been the subject of reclamation and it is assumed that any contamination associated with the previous use has been dealt with. With the proposed development being a solar array, which is a land use that is not vulnerable in this regard and is a reversible form of development, it is considered that the proposal would not lead to significant effects.

In operation, the hydrogen plant would not have any process discharges to land, surface or groundwater other than clean rainwater runoff. The electrolysis process is electrical and does not require storage of chemicals that could be a source of contamination in the event of spillage. Water purification will likely require small amounts of sodium hydroxide (NaOH) and hydrochloric acid (HCl) or sulphuric acid (H₂SO₄) to regenerate the ion exchange purification equipment.

It is suggested that there is very little potential for significant effects on hydrogeology or ground contamination in operation. Furthermore, there are no extant mineral operations, areas safeguarded for minerals or areas designated for geological interest on either site or areas around them. There is no potential for significant effects on geological resources.

Comment: The scheme should not have any significant effects in this regard.

c. The absorption capacity of the natural environment

- (i) **Are there any other areas on or around the location which are important or sensitive for reasons of their ecology or are used by protected, important species or fauna or flora which could be affected by the project?**

The proposed development site for the hydrogen plant is allocated land that has been cleared ready for development. The site of the proposed PV solar array is also land that has been subject to restoration.

The pipeline route corridor and private wire corridor run through a mix of greenfield and built-up area and cross a number of roads and a river.

The sites are not subject to any statutory environmental or landscape designations.

No ecological survey work has been carried out for the development sites yet but an ecological

desktop report has been prepared for land to the south-west of the proposed Brynmenyn hydrogen site on behalf of BCBC. That survey and report identifies in summary that there are three international statutory designations and five national statutory designations within the Zone of Influence (10km and 5km respectively).

Statutory sites are however, not considered to pose a likely constraint to future development given their distances and spatial separation. 17 non-statutory sites were identified within the Zone of Influence (2km) including one which extends across the Brynmenyn site – the Tyncoed Farm, Bryncethin SINC. A follow up ecological survey prior to the site clearance works considered that those areas within the main development site were no longer of SINC quality as only very small pockets of grassland remained. So whilst the designation still exists, the basis of its designation and geographic extent is narrower than the citation.

Comment: At this stage, based on the information received, the two development sites are not considered to have high environmental sensitivity.

(ii) Are there any inland, coastal, marine, or underground waters on or around the location which could be affected by the project?

Comment: The Council's Land Drainage Engineers have indicated that any future application would need to be accompanied by the following information:

- Confirm foul and surface water disposal methods
- Provide foul and surface water drainage layouts
- Provide an agreement in principle from DCWW for foul and surface water (if required) disposal to the public sewer
- Provide hydraulic calculations to confirm the site does not flood during a 1 in 100yr + 30%CC event
- Submit an Environmental Permit to NRW (if required)
- Provide a construction management plan outlining how surface water runoff and sediment/pollution runoff will be managed during the construction phase
- Submit an ordinary watercourse consent for any works involving existing ordinary watercourses
- Provide infiltration tests in compliance with BRE-Digest 365, details of proposed soakaways and maintenance plan should infiltration be proposed
- Submit a Sustainable Drainage Application to the Bridgend SAB.

There is no indication that underground waters on or around the site will be affected by the development at this stage.

(iii) Are there any areas or features of high landscape or scenic value on or around the location which could be affected by the project?

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The submitted screening report confirms that the hydrogen plant will be located immediately adjacent to the Brynmenyn Industrial Estate and therefore will be seen against the associated buildings and boundary treatments to service yards etc. Whilst at an elevated level, the site is screened by a dense vegetated woodland buffer to the main road and the dwellings beyond. Dwellings to the south will read the development over time in the context of the other schemes that will occupy the remainder of the allocated site between the hydrogen plant and them. That assessment is to some extent dependent on the scale of the buildings and plant which is not fully known at this stage. It may be necessary to undertake a Landscape and Visual Assessment to review the scale of any larger structures and their impact on the residents of the local community. Such impacts are however geographically contained.

The Bryncethin site is undulating and largely open, affording long but contained views from its periphery by a limited number of receptors. The nature of the proposal, a low-lying PV solar array, and the boundary screening in parts restrict views to the development.

The siting of the developments on the two sites will have an impact on visual amenities but whether that is significant at this stage is not fully known. Those impacts are likely to be limited the surrounding environs. Regarding landscape character, the hydrogen plant site's immediate setting is industrial whilst the wider landscape character is more varied. That of the Bryncethin site is more rural but on the fringe of the built-up area, no significant landscape character effect is considered likely at this or the Brynmenyn site. This will be reviewed as part of the Landscape and Visual Impact Assessment that will accompany any future application.

Comment: From the submitted information, it is not readily apparent that the development would have any significant impact on any such features.

(iv) Are there any areas on or around the location which are densely populated or built up which could be affected by the project?

Comment: The sites lie in or adjacent to the settlements of Bryncethin and Brynmenyn. No significant effects on the population have been identified in this regard.

(v) Are there any areas or features of historic or cultural importance on or around the location which could be affected by the project?

Comment: Neither site contains any designated heritage assets (World Heritage sites, Scheduled Monuments, Registered Parks and Gardens, Registered Historic Battlefields or Historic Wreck sites) or any Listed Buildings. Neither is within or adjacent to a Conservation Area. There would therefore be no direct physical impact or effect on any designated heritage assets.

Construction of the hydrogen plant could however, impact the settings of heritage assets if it is visible or audible within an aspect of the setting that makes a contribution to the importance, legibility or understanding of the heritage asset. The closest designated asset to the hydrogen production site is the residential property Maendy a Grade II* Listed Building listed as a substantial dated early C17 house retaining most of its original fabric. The farmhouse is located to the south of the site at the end of Leyshon Way.

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Notwithstanding the proximity to the development site, it is considered that because the hydrogen site will be located in the north of the development area and it and the wider site are allocated for development, any impact on setting has already been considered in principle.

With respect to potential archaeology and paleoenvironmental deposits, the majority of the hydrogen plant site together with land around it has already been subject to disturbance and clearance and the Bryncethin site has been the subject of comprehensive restoration.

Accordingly, there is considered to be limited remaining potential for adverse impact from construction work on archaeological features. No significant adverse residual effects are therefore considered likely

(vi) Are there any areas on or around the location which are already subject to pollution or environmental damage e.g., where existing legal environmental standards are exceeded, which could be affected by the project?

Comment: None identified.

(vii) Is the project location susceptible to subsidence, landslides, erosion, flooding, or extreme or adverse climatic conditions, which could cause the project to present environmental problems?

The purpose of the proposed development is to produce hydrogen from renewable electricity. The hydrogen will be used as a low carbon fuel. The consequent reduction in use of fossil fuels due to substitution by hydrogen, and avoided greenhouse gas (GHG) emissions, is a beneficial operational effect of the proposed development that is considered likely to be significant.

In construction, GHG emissions will be caused by construction traffic and plant and embodied in the materials and products consumed however, on a lifecycle basis these are expected to be minor relative to the GHG reduction benefits of hydrogen production (as illustrated, for example, in a lifecycle assessment of hydrogen decarbonization pathways) and construction stage effects are not considered likely to be significant. Any fugitive release of hydrogen is unlikely during normal operations. Purging/venting of hydrogen may be considered for abnormal/emergency scenarios and/or maintenance but in any event would have lesser potential global warming effect than fugitive natural gas.

The main potential climate risk to the hydrogen plant would be flooding which will be considered as part of a future application. At this stage it is not thought to be a significant risk. There are no other climatic risks to the development as no significant effects are likely.

The water supplier is required to have in place a Water Resources Management Plan (WRMP) that considers potential demand increases and the effects of climate change on supply. Dŵr Cymru Welsh Water's current WRMP looks out across 30 years from 2020 to 2050 to assess any risks in its ability to supply sufficient water to meet the demand from its customers even during the driest years. In this context, where a water supply connection offer is made by Dŵr Cymru Welsh Water with due consideration to climate resilience planning, no significant

adverse effect on water scarcity due to the proposed development is considered likely.

Comment: In summary, no significant construction stage GHG emission or climate risk effects are considered likely.

3. Characteristics of the potential development

a. The magnitude and spatial extent of the impact

Comment: No significant impacts have been identified.

b. The nature of the impact

Comment: No significant impacts have been identified.

c. The transboundary nature of the impact

Comment: No significant impacts have been identified as the development will be wholly contained within BCBC.

d. The intensity and complexity of the impact

Comment: No significant impacts have been identified.

e. The probability of the impact

Comment: Given the nature of the developments, the probability of the impact can be accurately identified from the outset with reasonable technical confidence and can therefore be appropriately addressed (and mitigated) where necessary.

f. The expected onset, duration, frequency, and reversibility of the impact

Comment: No significant impacts have been identified.

g. The cumulation of the impact with the impact of other existing and/or approved development

Comment: No significant impacts have been identified.

h. The possibility of effectively reducing the impact

Comment: No significant impacts have been identified.

CONCLUSION

Overall, it is our position that the likely environmental impacts arising from the proposed development would not be significant when considered against the assessment criteria contained within Schedule 3 of the EIA Regulations.

It is therefore our view that the proposed development would not require EIA for the following reasons:

- The Proposed Development is not considered to be a project which would fall within the criteria defined by Schedule 1 of the EIA Regulations, for which EIA is mandatory; and

Cyngor Bwrdeistref Sirol Pen-y-bont ar Ogwr Bridgend County Borough Council



Swyddfeydd Dinesig, Stryd yr Angel, Pen-y-bont, CF31 4WB / Civic Offices, Angel Street, Bridgend, CF31 4WB

- The Proposed Development may exceed the applicable thresholds and criteria under Part 3 (a) in Schedule 2 of the EIA Regulations but is unlikely to result in significant environmental impact. Where non-significant effects of the development have been identified, on the basis of the submitted information, these could be avoided or mitigated.

In the opinion of Bridgend County Borough Council, it does not represent an EIA development and an Environmental Statement will not be required as part of the application submission.

Yours faithfully,

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Cyfnwïd testun: Rhowch 18001 o flaen unrhyw un o'n rhifau ffon ar gyfer y gwasanaeth trosglwyddo testun

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We welcome correspondence in Welsh. Please let us know if your language choice is Welsh



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