REFERENCE: **P/23/218/FUL**

APPLICANT: Marubeni Europower 95 Gresham Street, London, EC2V 7AB

LOCATION: Land at Brynmenyn and Bryncethin Bridgend

PROPOSAL: Development of a green hydrogen production facility with electrolysers, hydrogen storage, hydrogen refuelling station, admin building, substation and back-up generator; with access, circulation, parking, lighting, 8-metre-high wall, security fencing, hard and soft landscaping, and drainage infrastructure (hydrogen pipeline omitted) on land at Brynmenyn. 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. Sites to be connected via an underground electrical wire.

RECEIVED: 30 March 2023

APPLICATION/SITE DESCRIPTION

Marubeni Europower are seeking full planning permission to develop a green hydrogen production facility (**Hydrogen Production Facility**) with associated works on land to the south-east of Brynmenyn Industrial Estate and west of the community of Bryncethin, together with the installation of a solar voltaic electricity generating station (**Solar Farm**) and associated works on land to the east of the community of Bryncethin and to the north of the B4280 that connects Bryncethin to Pencoed.

HYDROGEN PRODUCTION FACILITY

The site of the Hydrogen Production Facility measures approximately 2.2 hectares and comprises semi-improved grassland with stands of Himalayan balsam, growing on an area of recently cleared ground. Retained woodland extends along the perimeter of the site on the northern, southern, and eastern boundaries. The site forms part of the Tyn y Coed Farm Site of Importance for Nature Conservation (**SINC**). The A4065 lies approximately 45m to the east of the site boundary running north to south. Most of the land uses immediately surrounding the site are industrial. However, there are residential dwellings to the south and east of the site, the nearest of which is 30m from the Application site boundary, (77 Davis Avenue refers). The industrial estate which the proposed site is located adjacent to has flat topography, however local residential dwellings are raised above the site. The hydrogen plant site is gently sloping from east to west with a uniform topography throughout. It falls from its highest point of approximately 65 m AOD (east) to a height of approximately 55 m AOD in the west.

The proposed development comprises a Hydrogen Production Facility with electrolysers that generate hydrogen from electrical power by splitting water; hydrogen storage and a hydrogen refuelling station. 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 access for re-fuelling of vehicles including an outer perimeter road, and the remainder for an ‘island’ of hydrogen production, storage, and re-fuelling equipment – see Figure 1 below – Site Layout Plan.

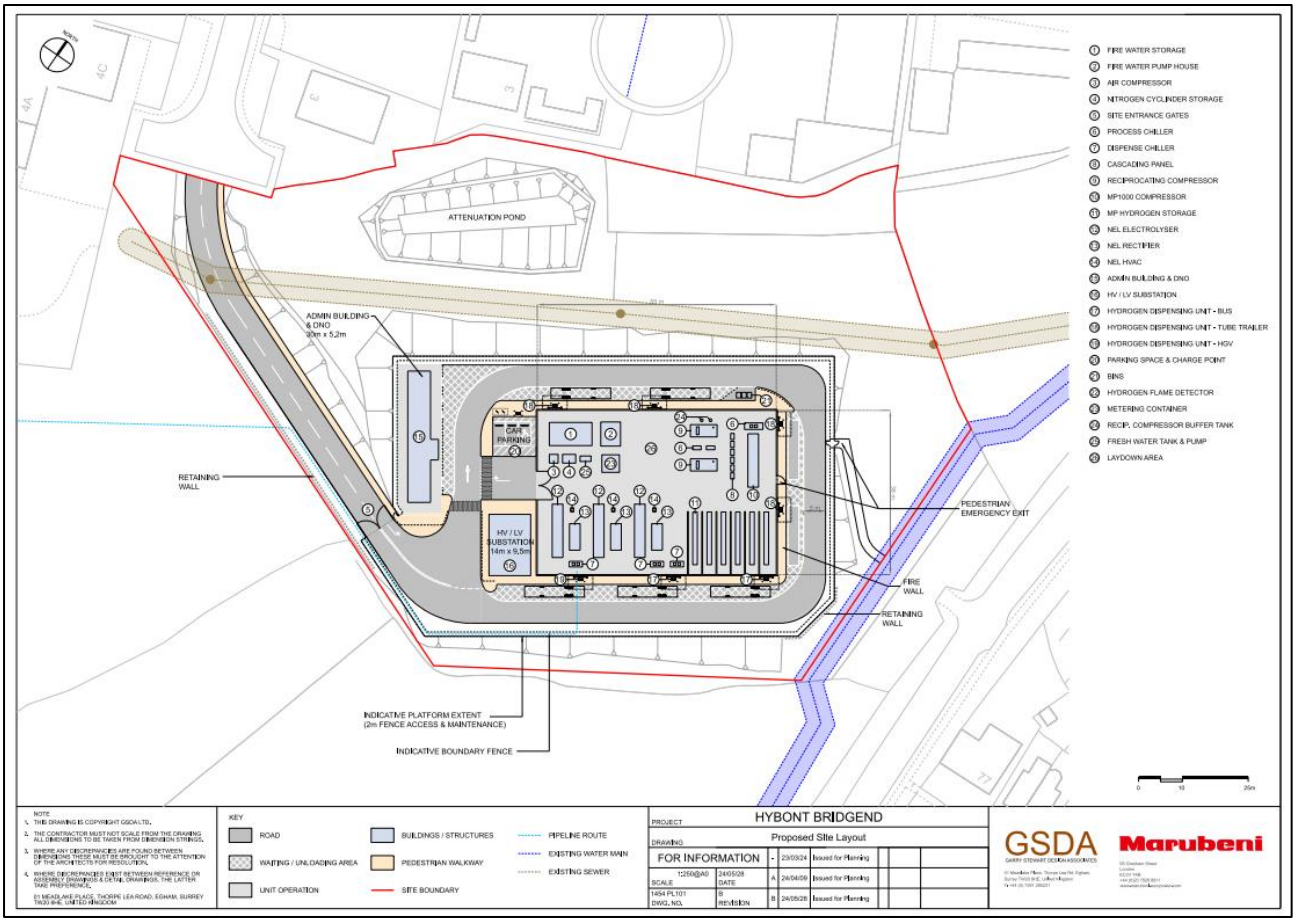

Figure 1: Site Layout Plan

The production facility will occupy an enclosed reinforced concrete pad, formed through site excavations (cut and fill) and the formation of earth embankments and construction of retaining walls. The gated central area (measuring 55m x 38m) will accommodate a series of modular buildings and containers that will house three electrolysers and supporting equipment including rectifiers (current converting units) and HVAC (Heating, Ventilation and Air Conditioning) units. Six hydrogen storage tanks will occupy the south-eastern corner of the central area, positioned adjacent to 3m high concrete walls. Other plant, machinery and storage buildings will occupy the central area including water tanks, compressors, chillers and meters. The latest site layout plan includes an 8m high concrete acoustic wall on the north-eastern and south-eastern boundaries of the central area.

The remaining part of the concrete pad will accommodate the circulatory access road and set down areas for buses, tube trailers, and HGVs that will all be served by the Hydrogen Dispenser Units. Two permanent buildings for the substation and administration/control uses will lie to the west of the main compound along with an area of parking for staff.

Information submitted with the Application indicates that the 443 tonnes of hydrogen produced a year would be expected to fuel HGVs and local and regional buses. Tube-trailers will be used to distribute hydrogen to consumers. The tube-trailers are expected to be standard 180 to 300 bar trailers.

Revised visualisations of the proposed Hydrogen Production Facility that have accompanied the Application are reproduced below:

Figure 2: Birds Eye View of Hydrogen Production Facility inc.8 m High Wall and Immediate Surroundings

Figure 3: Eye Level View of Hydrogen Production Facility from West of Site

Generally, the hydrogen production plant is a low-rise development, save for some vent pipes which will reach a maximum height of 11.35m from the site ground levels. The dimensions of the main buildings, plant and equipment are set out in the table below:

Buildings Plant Equipment	Dimensions
Administration and DNO Switchroom Building	30m x 5.2m with pitched roof to a height of 5.1m
HV and LV Substation Building	14m x 9.5 m with pitched roof to a height of 3.88m
Electrolyser (Building and Plant)	12.4m x 2.7m (building footprint) Stack (6.84m from ground level), Top of Cowls (7.2m from ground level) and Hydrogen Vent (11.35m) from ground level.
Rectifier (Containerised)	6.3m x 2.7m with a flat roof to a height of 3m
Reciprocating Compressor	6.0m x 2.7m with a flat roof to a height of 2.5m
Metering Container	4.0m x 4.0m with a flat roof to a height of 3m
Hydrogen Storage Tank (Steel Vessel)	12m x 1.05m reaching a maximum height of 1.5m from ground level with 3.5m firewalls alongside
Compressor (Containerised)	12.2m x 2.4m reaching a maximum height of 2.89m
Canopy and Pump	Maximum height of 5.8m
Fire Water Tank	9.7m x 5.2m with the rim of the tank reaching 2.51m and handrail 3.61m
Fire Water Pump House (Containerised)	5.5m x 4.5m with a flat roof to a height of 3.1m
Nitrogen Storage Cage and Nitrogen Air Compressor	3m x 2m x 2.5m to top of cage 2m x 2m x 2.5m to top of unit.

Extracts from the submitted site section drawings illustrate the height of the building and plant relative to the site surroundings:

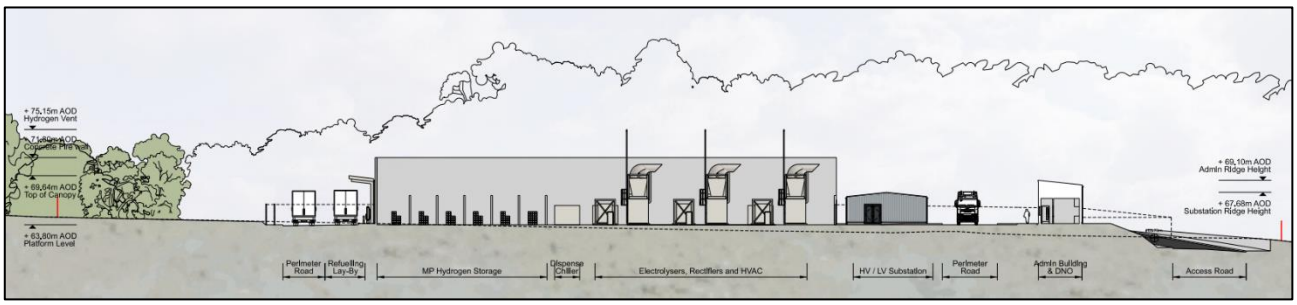

Figure 4: Site Section Viewed from North-West

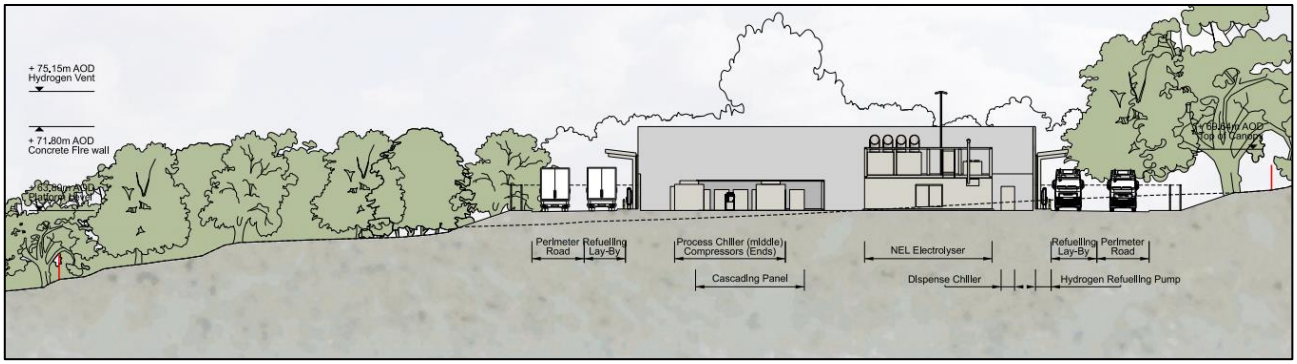

Figure 5: Site Section Viewed from South-West

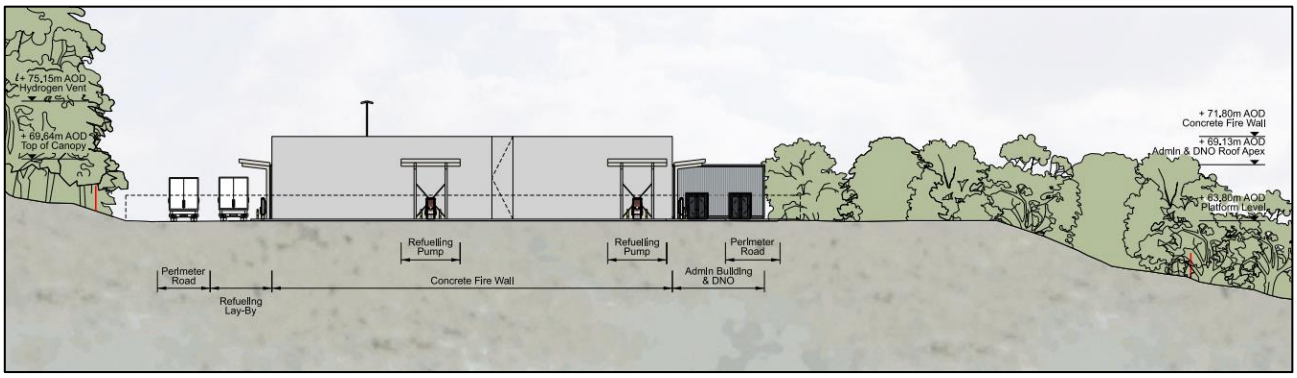

Figure 6: Site Section Viewed from North-East

Figure 7: Site Section Viewed from East (A4065)

To create the access road and development plateau that will accommodate the hydrogen production plant, excavations will be required in the form of a cut and fill operation across the site. The tables submitted indicate a cut of approximately 7, 710 cubic metres and a fill of 2,537 cubic metres. Cut embankments will be formed along with retaining walls on the eastern and south-eastern boundaries (the high points of the site) adjacent to an existing line of retained trees, with filled earthworks along the north-western side of the plateau. The access road will be formed in an excavated cutting, necessitating the construction of a 3m high retaining wall on the southern side for a length of some 70m.

The operational access to the Hydrogen Production Facility will be from the Brynmenyn Industrial Estate, via Squire Drive, which has a carriage width of approximately 6m and benefits from footways along both sides of its carriageway. Squire Drive currently serves as access for six industrial units and runs on a north to south alignment from Millers Avenue. This internal road will be extended into the site where the internal carriage width is 7.4m, this allows for two-way access and egress of vehicles. There will be a controlled access in the form of security gates, restricting access for unauthorised vehicles. Drawings have been submitted showing a 16.5m HGV (as the largest vehicle expected on site during operation) accessing and egressing the site via Squire Drive. A swept path analysis has also been included that seeks to demonstrate that a 16.5m HGV can manoeuvre around the site in a clockwise direction without issue. Pedestrians and cyclists will access the development site via Squire Drive. In addition, there is a car free pedestrian / cycle access located on the eastern side of the development site. This provides direct access onto the A4065 but will only be used as an emergency access.

Column mounted lighting will be provided at various locations around the production facility, reaching a maximum height of 6m from the finished site ground level.

During the construction phase of the Hydrogen Production Facility a temporary access is to

be used, comprising an extension to Chilcott Avenue to the west of the site. This access route will be used until the permanent new access off Squire Drive is constructed. Once constructed, Squire Drive will be the only access route into the hydrogen plant site. The submitted Construction Environmental Management Plan confirms that no vehicle parking, loading or unloading is to take place on the public highway. Parking will be made available to accommodate the needs of staff/visitor vehicles within the hydrogen plant site.

The Hydrogen Production Facility will be able to operate independently as a combined hydrogen production, storage, and hydrogen refuelling station site. The Hydrogen Production Facility is intended to be manned principally to manage refuelling operations. It is not expected that customers will need to refuel around-the-clock.

Electrical power will be provided from a distribution network operator supply and a solar generation supply at the High Voltage (HV) substation. This supply shall include the capability to source power from grid and solar generation through an underground private wire connection, comprising a single 8 MVA cable laid at 750 mm depth, connecting the site to the Solar Photovoltaic (**PV**) Array (Solar Farm) at Bryncethin which is also part of this Application. The line of the private wire connection is illustrated on the plan (Figure 8.) below:

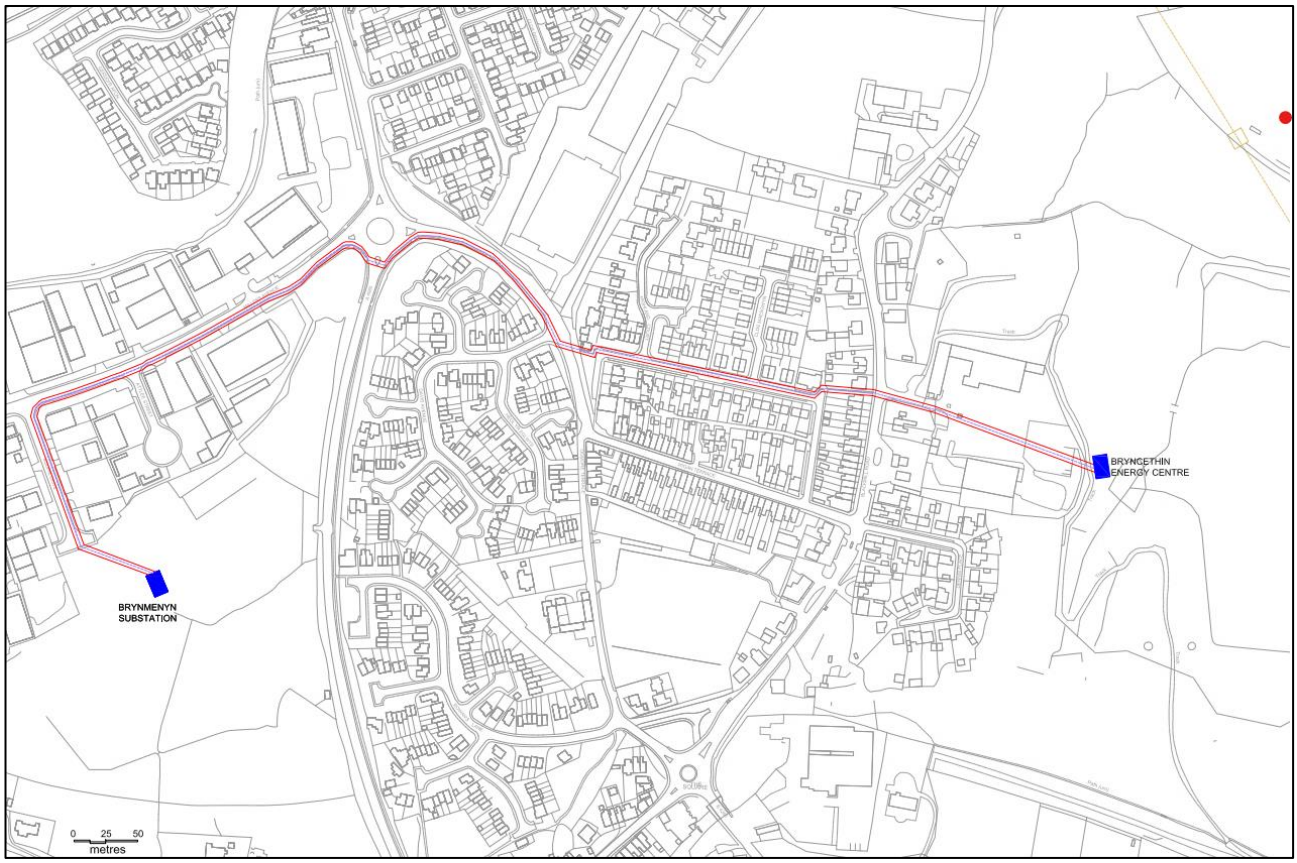

Figure 8: Line of Private Wire Connection

Hydrogen is intended to be supplied for transport users (refuse collection vehicles, buses and light vehicles) at the Brynmenyn site refuelling station dispensers. It should be noted that the hydrogen pipeline that was part of the original submission has been omitted from the Application.

SOLAR VOLTAIC ELECTRICITY GENERATING STATION (Solar Farm)

The site of the Solar Farm measures approximately 9.3 hectares in area and will cover ground that lies to the east of the A4061, to the rear of the Bryncethin Depot and south towards the B4280 and Cefn Hirgoed common. Attenuation ponds that form part of the development will be created on land to the rear of properties on Dennis Place.

The site largely comprises acid grassland and semi-improved grassland with patches of rushes and scattered gorse scrub. A pond and shallow engineered wet ditches are present within the site. Blocks of broadleaved woodland are located along the site boundary. Overhead power lines crosscut the eastern portion of the site which is currently undeveloped and, although there is no evidence of made ground on the site, it has a mining history and a history of reworking and infilling. The Solar Farm site slopes gently northeast to southwest with some topographical variation across it. It falls from its highest point of approximately 83 m AOD (northeast) to a height of approximately 77 m AOD at the southwest corner of the site.

Figure 9: Proposed Solar Array as Amended
(Panels in north-eastern corner omitted)

The solar array will consists of ground-mounted solar panels sited in three parcels, defined in part by the retained trees on the site boundary, access tracks throughout the site and open land on the southern and eastern edges of the development. The panels would be ground-mounted to a maximum height above ground level of approximately 3m. The panels which are 4.7m in length would be oriented towards south and pitched at 20 degrees. 5.1m will separate the rows of panels – see Figure 10 below:

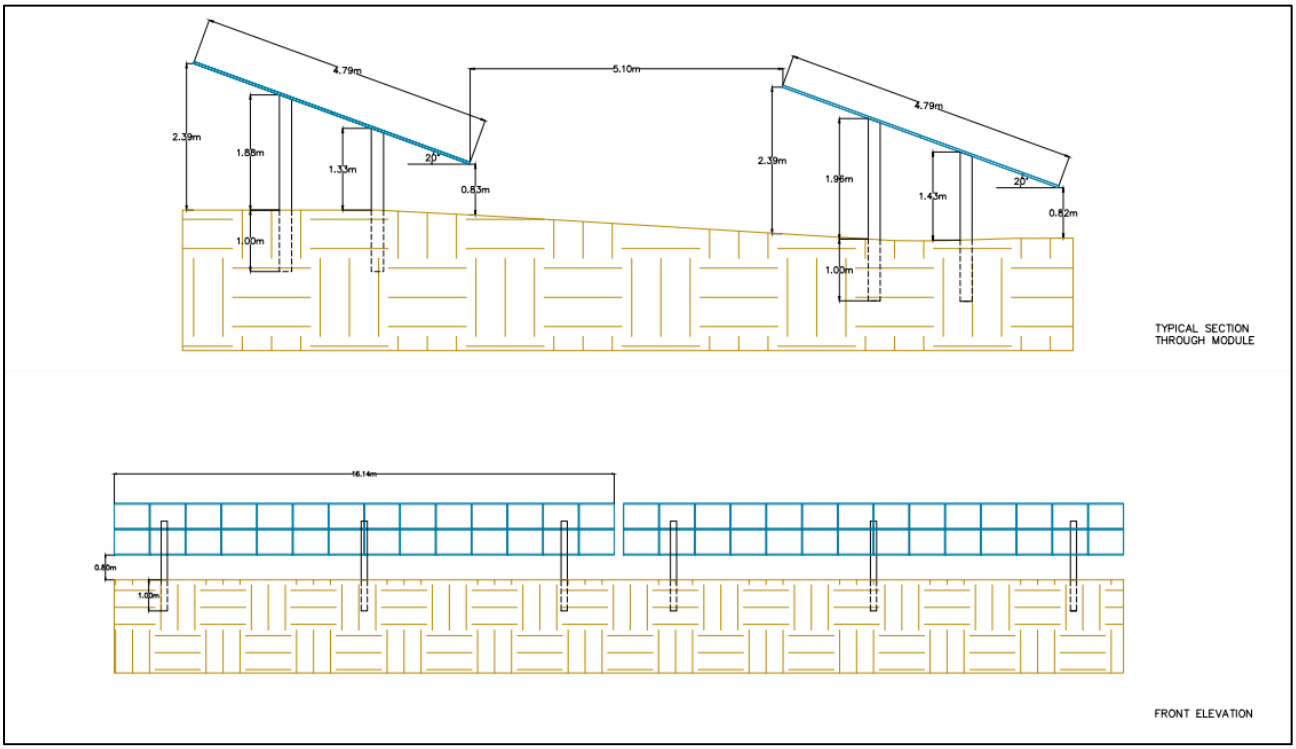

Figure 10: Details of Solar Panels

The proposed Solar Farm would have a rated capacity of up to 5.5MWp, consisting of approximately 9,700 PV panels. Ancillary infrastructure including inverters (to be mounted behind the panels), LV transformer units, electrical infrastructure, control building, switch gear and substation will also be provided as part of the development. Further details are provided in the table below:

Solar Panels	16.14m x 4.79m angled to a maximum height of 2.39m from finished ground level.
Solar Inverter	Positioned behind the panels and reaching a height of 1.5m from ground level.
Transformer and Switch Gear Unit	6.1m x 2.5m reaching a height of 3.1m from ground level.
Control Building inc. Switchgear Room	9m x 7.4m with pitched roof reaching a height of 4m from ground level
CCTV	Day and Night Camera affixed on a 4m high pole – position unknown at this stage
Security Fencing and Gates	2.5m high security fencing consisting of high-tension tensile wire mesh affixed to 3m high timer posts, incorporating gaps and gates for the passage of small mammals and erected around the boundary of the site and adjacent to the Bryncethin Depot and the rear of properties on Dennis Place.

The Application documents anticipate the useful life of the proposed development would be 25 -30 years.

The site is currently owned by BCBC and is in use for recreation and grazing purposes. 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.

It is predicted that the Solar Farm would have an 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 PV facility (Solar Farm) is intended to be an unmanned 24/7 operation which is typical for this type of facility.

The construction phase access to the proposed Solar Farm site is proposed via the BCBC Bryncethin Depot, utilising an existing concrete hardstanding road and yard for access. This route to the Solar Farm site would be the sole access to the Solar Farm site during the construction period, and beyond during the operational phase. No vehicle parking, loading or unloading associated with the Solar Farm construction or operation is to take place on the public highway, or within the BCBC Bryncethin Depot.

It is anticipated that this access route will require the removal of some trees and de-vegetation at the entrance point to the field to permit vehicle access. This will be localised to allow working room during the constructional phase and is to be undertaken during the pre-construction phases.

The Application has been accompanied by the following technical reports:

• Design and Access Statement by RPS dated March 2023
• Climate Change Statement
• Transport Statement by RPS dated March 2023
• Noise Assessments (Hydrogen Plant and Solar Farm) and Noise Mitigation Works
• External Lighting Report
• Utilities and Emissions Summary
• Air Quality Assessment
• Preliminary Ecological Report
• Ecological Impact Assessment and Fungi Survey; Dormouse Report; Otter Report; Breeding Birds Report; Great Crested Newt Report; Tree Ground Inspection for Bat Roosts; Invertebrate Surveys; Reptile Report; HyBont National Vegetation Classification Plan; Vegetations Survey;
• Habitat Regulation Assessment • Green Infrastructure Assessment
• Landscape and Visual Impact Assessment for Hydrogen Plant Site and Solar Farm Site and Addendum (Views from the A4065 to the east / southeast of the proposed HyBont – Re: 8m high wall).
• Coal Mining Risk Assessment
• Ground Investigation Report Hydrogen Plant Site
• Ground Investigation Report Solar Farm Site
• Geotechnical and Geo-environmental Impact Assessment Reports for Hydrogen Plant Site and Solar Farm Site
• Flood Consequence Assessment with Update
• Drainage Strategy Report
• Construction Environmental Management Plan

A summary of the key findings of the main technical reports listed above is attached as

APPENDIX A to this report.

In accordance with Part 1A of the Town and Country Planning (Development Management Procedures) (Wales) (Amended) Order 2016, the proposal has been the subject of a pre-application consultation process with specialist consultees and the community including the surrounding Town and Community Councils, local Ward Members and residents. The Applicant company also hosted an exhibition/information event at the Ynysawdre Leisure Centre on the 13th and 14th of December 2022.

The proposed development has been the subject of a formal Screening Request which was received by the Council on 15th July 2022 and a decision reference P/22/572/SOR issued on 15th September 2022. The decision was that: *"On the basis of the information available at this time and for the purposes of this assessment only, the development in unlikely to have a significant environmental effect and an EIA is not required."*

Members should be aware that on 1st June 2023, Welsh Government issued a Direction under Article 18 of the Town and Country Planning (Development Management Procedure) (Wales) Order 2012. It states that the Local Planning Authority shall not grant planning permission for the development comprising Application P/23/218/FUL or any development of the same kind as that in the above Application, which is proposed on any site forming part of, or includes the land to which the above Application relates.

The direction is issued to enable further consideration to be given to whether or not the Application should be referred to the Welsh Ministers for their determination. The direction only prevents the authority from granting planning permission; it does not prevent it from continuing to process or consult on the Application. Neither does it prevent it from refusing planning permission.

RELEVANT HISTORY

Hydrogen Production Plant Site

Application Reference	Description	Decision	Date
P/97/427/FUL	Extension to Light Industrial Unit	Conditional Consent	17 June 1997
P/22/572/SOR	Request for Screening Opinion: Bridgend Green Hydrogen Plant – hydrogen production plant, together with solar array and associated private wire connection and pipeline take-off	EIA Not Required	14 September 2022.

Solar Farm Site

Application Reference	Description	Decision	Date
P/98/715/MIN	Drilling of Exploratory Boreholes, ground stimulation and testing of coalbed methane gas flows	Conditional Consent	5 October 1998
P/14/194/FUL	Three New Rugby Fields	Conditional Consent	6 March 2015
P/21/494/FUL	Provision of Three New Rugby Fields (Renewal of P/14/194/FUL	Under Consideration (additional details requested but not submitted)	No decision

PUBLICITY
The Application has been advertised on site and in the press. Neighbours were notified of the receipt of the Application on 4 May 2023 and subsequently on 12 March 2024 and 16 August 2024 in respect of amended plans/documents. The period allowed for response to consultations/publicity has expired.

CONSULTATION RESPONSES

St Brides Community Council:
Our council members unanimously voted to object; our reasons for objection are as follows:

- Concerns regarding the planned location due to its proximity to residential properties.
- Concerns that accurate traffic surveys have not been carried out as the suggested volume of traffic is questionable as the traffic survey was carried out during covid when there was less traffic on the roads.
- The road network is insufficient to deal with the additional traffic.
- That consideration has not been given to the close proximity of other existing businesses such as Guardian Gas and a Brewery. Whilst the safety of the plant itself appears to have been partly addressed by the developer the impact of fire or explosion at neighbouring properties on the hydrogen plant has not.
- Insufficient water supply for the plant (Dwr Cymru Welsh Water consultation response).
- LDP shows the solar farm area as an area for sport and leisure. As such this development is contrary to the LDP.
- This area of land needs to be protected for future use.

Additional Comments in response to August 2024 re-consultation:
We strongly object for a number of reasons including the increase in traffic on the A4061 and junction 36 which is already to capacity. We also object as the site is too close to residential dwellings and other industrial units from a H&S and noise perspective.

We would also like to see further evidence of the environmental survey of both locations i.e. photographs of all equipment to be used at the locations mentioned in the survey.

The proposed site for HyBont is close to the river Ogmore. The river Ogmore and its tributary the river Garw receive rainwater drainage from a very significant area of upland which regularly puts these rivers in flood with danger of overtopping of banks. The existing risk to nearby properties is mapped by Natural Resources Wales. At present this risk extends to approximately 50% of the industrial estate which HyBont will be part of. There is also a stream to the south of the site which is mapped as a flood risk. Whilst the flood risks do not at present extend to the HyBont site, consideration must be given to how this could change with the predicted ongoing effects of climate change, particularly intense rainfall. This should extend to the operational lifetime of the site plus the time to be allowed for decommissioning of the site.

Not knowing the routes of the external infrastructure or services to the site, we can only suggest that these are also considered for existing and future risks.

Cllr Tim Thomas - Local Member (Speaker)
I wish to object to the planning application P/23/218/FUL, Land at Brynmenyn and Bryncethin Bridgend for the proposal of development of a green hydrogen production facility. My reasons for objections are as follows:

Transport and congestion
Traffic and congestion are already at a concerning level especially along the A4061 and A4065. The development will add to congestion at a time when the Welsh Government have little appetite for road infrastructure improvements. The proposed development will bring around 50 HGV vehicles during the construction and post development phase, this will be critical to an area already blighted by congestion within Brynmenyn Industrial estate where congestion can be significant especially around the refuse centre.

Further to this, I have reservations over the reliability of the Transport Survey which appears to be unreliably conducted during the Covid pandemic when traffic volumes were lower. The level of detail also appears insufficient for a development of this magnitude.

The plans also show the development site will be on a raised level with the base of the facility around the top of the roof height for the existing buildings on the industrial estate. I have concerns over the safety and viability of buses being able to climb this gradient.

Impact on water supplies and air quality
The hydrogen production process requires significant water supplies. There are contradictions in the planning papers, but there is indication of concern from Welsh Water alluding to the fact that the development could have a negative impact on water pressures and supplies. With equal regard, I have similar reservations of the impact on electricity. I am also concerned about the lack of mitigation towards the hydrogen process in emitting nitrogen oxide and the impact this could have on local air quality.

Impact on local businesses
The development will have a negative impact on jobs and local businesses especially those situated on SquireDrive on Brynmenyn Industrial Estate. Businesses will no longer be able to park on Squires Drive which I am led to believe will be critical to the viability of many local businesses. While on the subject of local businesses, I am concerned by the lack of analysis on existing businesses and their possible impact. This includes a gas production facility and a brewery which has a history of explosions.

Impact on land ring fenced for leisure use.
I have concerns over the impact the proposal could have on land ringfenced for leisure use on the claypits for Bryncethin RFC. There are limitations on land used for leisure use and the proposal will negatively impact leisure, sporting and recreation.

Health and safety
BCBC have informed that the HSE Directorate and specialists have yet to be consulted. The HSE consultation period for a Tier 1 hazardous facility and hazardous substance consent (HSC) is 13- 26 weeks and the determination of outcome by the HSE 6-12 months, something BCBC appear intent on avoiding.

With respect to the requirement for planning to be considered under the Planning (Hazardous Substances) Act 1990, Jonathan Parsons, Group Manager Planning & Development Services at BCBC, identified in August 2022 that: '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.'

That BCBC have not considered health and safety in the pre-planning stage and are now driving a train through both planning legislation and HSE regulation by claiming now 'that the HSC can come after planning determination.' This is clearly a nonsense, as the HSE requirements that the response should inform the planning decision and so must be available for review at planning and scrutiny by the wider community. By applying this after planning, the community are being extremely prejudiced and put in unnecessary danger. That BCBC are intentionally ignoring the law is abominable and clearly will be subject to judicial review if not Called in by the Welsh Government for determination of validity.

Finally, I am concerned over the lack of due diligence on ecology with several protected species such as newts and bats being identified in the area. Likewise, I am concerned over the impact of high levels of methane in the ground, which is typical in coalmining area, and the impact these levels could have on safety with the development.

Additional Comments in response to August 2024 re-consultation:
I strongly object to planning application P/23/218/FUL as the proposed development will be to the detriment of the local and wider community.

I note that Planning and Environment Decisions Wales upheld Bridgend County Borough Council's decision to refuse land west of A4065 north of Leyshon Way, Bryncethin, CF32 9AZ (Appeal reference: CAS-03065-L4R2B. While this is a separate application, many of the reasons for refusal are applicable for refusal of P/23/218/FUL.

Impact on traffic and congestion

- The construction phase will add considerably to traffic in the area which is already a problem at peak times. Indeed, the LDP states that further significant development in the local area cannot commence until improvements have been made on junction 36 of the M4. While this development is small in building size, it will add significant additional pressure to the local roads infrastructure with circa 50 HGVs being used following construction. Additionally, the A4061 is already heavily congested.

- HSE certification on Brynmenyn site was paused on 6/6/24 primarily because the layout(s) cannot be resolved and require further information or clarification.

- The gradient from Squire Drive into the Brynmenyn site is too steep for HGVs. Accordingly, this will prevent appropriate access and egress to the site.

- RLDP Policy SP10 says that all development proposals must be supported by sufficient existing or new infrastructure. In order to mitigate likely adverse impacts and/or to integrate a development proposal with its surroundings, reasonable infrastructure provision or financial contributions to such infrastructure must be provided by developers where necessary. Given the impact from the construction phase and the number of HGVs operating during the normal usage of the proposed development, I am not aware of any developers proposed contribution to improve the local road infrastructure.

Impact on local businesses

- Local businesses has told me that access into Squires Drive will be difficult. Businesses will be prevented from parking on Squires Drive and this will prevent them from trading with many warning that they will go out of business.

Impact on the local community

- Policy SP3 also requires that development must ensure that the amenity of neighbouring uses, and their users / occupiers will not be adversely affected. I have concerned the proposed development could have on noise levels locally. Firstly, there are also five diesel HGV movements per night (at 105db), which will greatly add to the noise at night-time for residents and others. Secondly, I have concerns about the noise impact assessment report which states that dispenser vents will be operational throughout the proposed development 24 hours a day with electrolysis fans being operational potentially causing noise. Clearly the proposed development will produce unacceptable noise, such as from traffic, and will subsequently affect people's living conditions through reducing the enjoyment of their gardens or by needing to keep windows shut to dampen noise.

- There appears to be very little local benefit with the proposed removal of pipeline to ensure energy benefits to local public sector buildings including schools, council buildings and the swimming pool. I have requested clarification which has not been provided, but it is my understanding these local benefits will no longer be achieved.

Impact on water sources

- The proposed development is situated in zone C2 as defined by the Development Advice Map (DAM) referred to in Technical Advice Note 15: Development & Flood Risk (TAN 15.) I see no evidence of the developer putting safeguards in place to deal with surface water drainage and ground contamination matters.

- I am concerned that the electrolysis process will require water sources and this could have an adverse impact on local water pressures.

Impact on biodiversity

- I would like clarification that Environment (Wales) Act 2016 Section 7 priority species (hedgehog) is not present at the proposed site. I am concerned that if this species and other species that are protected such as grass snakes and bats could be detrimentally affected through loss of suitable habitat.

I have many additional concerns about the proposed development. However, they might not be considered material planning matters. However, in my view they could lead to the detriment of the quality of life of people living locally.

Highways:
No objection subject to conditions.

Shared Regulatory Services – Pollution Control:
No objection subject to conditions.

Land Drainage:
No objection subject to conditions.

Dwr Cymru/Welsh Water:
No objection subject to conditions.

BCBC Structural Engineer:
The Engineering information sent with this application has been reviewed and it covers the Engineering aspects adequately. The Geo Environmental studies for each of the two sites are comprehensive for the planning of the sites.

The site investigation reports for both sites have been undertaken by sufficiently qualified companies and are comprehensive and give sufficient information for the design of the foundations of the two proposed facilities.

Countryside Management/Ecology
No adverse comments received.

Shared Regulatory Services - Environment Team – Air Quality
No objection subject to conditions.

Shared Regulatory Services – Environment Team – Land Quality
The submitted reports include detailed preliminary contamination and mine gas assessments based on desk studies and site walkovers. They confirm the need for site investigation works including gas monitoring to determine the nature and extent of ground contamination and gas emissions and the 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 to develop the landscaped areas of the development, 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.

Shared Regulatory Services requests the inclusion of conditions and informative statement in accordance with CIEH best practice and to ensure that the safety of future occupiers is not prejudiced in accordance with policy ENV7 of the Bridgend County Borough Council Local Development Plan

Health and Safety Executive – Land Use Planning Team
Under the Town and Country Planning (Development Management Procedure) (Wales) Order 2012 (as amended) HSE is a statutory consultee for certain developments within the Consultation Zones of major hazard sites and major accident hazard pipelines. These types of development include:

- residential accommodation
- more than 250m2 of retail floor space
- more than 500m2 of office floor space
- more than 750m2 of floor space to be used for an industrial process
- transport links
- or developments which are otherwise likely to result in a material increase in the number of persons working within or visiting the notified area (once the construction work has been completed).

In this case, we can confirm that the proposed development does not lie within the Consultation Zone of any of the major hazard sites or major accident hazard pipelines considered by HSE. Therefore, based on the information provided there is no need to consult HSE's Land Use Planning advice team on this application, and we have no comments to make.

Hazardous Substance Consent legislation
From the information provided it appears the development may store or process

hydrogen in quantities relevant to the Planning (Hazardous Substances) (Wales) Regulations 2015. The identities and controlled quantities of hazardous substances are listed in Schedule 1 of the Planning (Hazardous Substances) (Wales) Regulations 2015. The applicant should consider whether they need to apply to the planning authority for a planning consent under this legislation. If planning consent for hazardous substances is required, HSE is a statutory consultee for such applications. **Pipeline Safety Regulations** We understand that the proposed development may contain a pipeline conveying hydrogen. If the pipeline meets the criteria for a major accident hazard pipeline as defined in Schedule 2 of the 1996 Pipeline Safety Regulations, the provisions in Regulations 19 to 27, including a requirement to notify HSE of a pipeline route before construction, will apply.
Natural Resources Wales No objection subject to conditions.
The Coal Authority No objections.
Glamorgan Gwent Archaeological Trust No objection subject to conditions.
South Wales Fire Service No objection.
South Wales Police Advice provided in respect of the following: (i). Perimeter security; (ii). Vehicle and pedestrian access; (iii). CCTV; (iv). Signage; (v). Lighting; (vi). Landscaping; (vii). Vehicle parking areas; (viii). Bicycle stores; (ix). Bin stores; (x). Building shell security; (xi). Drainpipes; (xii). Intruder alarm systems; (xiii). Access control; (xiv). Door security; (xv). Window security.

REPRESENTATIONS RECEIVED

This Application has been the subject to a significant level of objection which is detailed as follows:

a) Letters of objection from over 250 residents and businesses in the Bryncethin, Brynmenyn and Sarn area. Objections have also been received from outside the community; and
b) A number of individual emails were received but without property addresses, objecting to the development and requesting that the Application be referred to the Development Control Committee for determination.

The following is a summary of the objections received:

Procedural Concerns – proper process has not been followed and inconsistencies in submission – development not in accordance with the Development Plan

- The concerns and objections offered to RPS as part of pre-planning application consultation have been ignored and taken by RPS/Marubeni as feedback, not as objections.
- An Environmental Impact Assessment should have accompanied the application

- Hazardous Substance Consent application should be processed/determined alongside planning application – need to understand the view of Health and Safety Executive. The planning application is not valid as this does not comply with planning law.
- The development would conflict with the Council's own well-being policies – the proposed use does not fall within a B2 use –significant amounts of chemicals are used in treating the water prior to electrolysis. There is therefore a chemical treatment prior to any electrolysis - this is a hazardous facility that does not fall under B2 (general industrial) and accord with the site's allocation. Application should be determined by Council as an out of accord development.
- There is a conflict of interest as the Council are landowners and partners with the developers.
- The Council has failed to consider alternative sites for this development to avoid harm to the community
- The clay pits area should not be converted to industrial – should be retained as green space.
- This planning application should not be considered by BCBC because it is a DNS and part of the Welsh Governments wider Net Zero strategy. This is highlighted by the document "Design and Access Statement," where the title is "Development of National Significance."
- There is inconsistency in the planning documents - this was proposed as a 5MW demonstration site. The HAR1 grant funding is for 5.2 MW. Planning is for 6MW but planning documents state up to 10MW, to be in line with WG strategy documents that also say this will be 10MW. A Marubeni representative stated at the exhibition that this will be raised to 7.5MW after planning is granted. Three electrolysers are proposed but no details of specification. WG hydrogen consultation suggest using 5MW electrolysers, in line with the energy flow schematic for 5MW rather than the 6MW planning figure, making this plant anything up to 15MW - this is material, as the size of electrolyser and associated equipment would have a significant impact on all matters including traffic, noise and in particular access on Squire Drive for existing businesses.
- Pipelines, claimed verbally not to be required for this project but remains in the planning documents.

Health and Safety Concerns

- Scant regard paid to safety throughout this project - Hydrogen is highly explosive and there are clear examples of explosions in other facilities - not a suitable development in a densely populated residential area-too close to houses and businesses –5 tonnes of highly explosive gas less than 80m from the nearest dwelling – no explosion risk assessment - this is a trial installation – the technology is largely untried -house insurance for property owners in the vicinity of the development is likely to rise while property values fall - schools lie relatively close to the development – any blast would have significant impact
- Statutory HSE requirements have not been met by the application - the Explosive Regulations 2014 suggests a 'safe separation distances', between stored explosive materials and buildings – this will be breached by the development. People are seemingly and knowingly being put at unacceptable risk.
- No emergency plan/evacuation plan submitted with the application
- Why has work on the Hazardous Substance Consent application stopped?
- Plant will be operated from Japan not UK
- Processing and transportation of flammable/explosive substance in tube trailers so close to residents is unacceptable – the hydrogen pipeline will go through the grounds of the school a further safety concern
- Considerable safety concerns, still not addressed by the planning submission – company do not have a good track record with health and safety regulations.

Adverse Impact on the Living Conditions of Residents and the Operation of Businesses

- Noise from site operations (pumps, fans, compressors etc.) and additional traffic will disturb residents – only 40m from the nearest house – it will disrupt sleep patterns (24-hour operation). Noise levels have been underestimated.
- Noise from the oxygen vent would be similar to a gas turbine – will sound like a jet engine – unacceptable and significant impact. Noise report has not considered impact on wider area. Whilst the acoustic barrier has increased in height, the sound emitted will now be diverted upwards causing the residents living at a higher level on the hills in both Bryncethin and Brynmenyn to be affected.
- Air quality affected by the venting of oxygen and H20 vapour. This will result in oxygen enrichment of the air, increasing fire risks, decreasing CO2% and therefore plant growth and will exceed the limits for human health.
- Traffic congestion will affect air quality for the surrounding area. During construction, heavy plant and machinery will cause pollution and dust in the air.
- Lighting will cause a nuisance to surrounding properties - increased light will also likely cause disruption to local animals and residents.

Highway and Drainage Infrastructure cannot accommodate the demand of this development

- Is the Traffic Assessment suitably robust (possible use of Covid data) and does it review all the road networks serving the site – The Transport Statement is flawed as it relies on 2021 Annual Average Daily Flow (AADF) data for the A4065 obtained from the DfT. In 2021 the country was recovering from the COVID pandemic and numerous lockdowns when traffic on the roads was much lighter, no consideration has been given to the increase in traffic returning to normal levels pre-pandemic.
- Road infrastructure cannot accommodate additional traffic during construction and post construction – could affect access for emergency vehicles and public transport with network often grid-locked – construction of another solar farm in Heol y Cyw and the Cenin development off J36 could add to construction traffic. Recent appeal decision on adjoining land for housing recognises the constraints of local infrastructure. Council's policies acknowledge the constraints placed on development north of junction 36.
- Ambulance station and Rapid Response Units based locally – could impede access for emergency vehicles.
- Squire Drive is not suitable to serve the development and congestion on road could affect existing businesses. Already double parked vehicles for most of the length of the road – this will be exacerbated and could disrupt businesses and even lead to closures.
- Access road is too steep and changes to the turning head on Squire Drive to accommodate access could affect access to adjoining businesses – potential that vehicles will ground - deliberate intent by the applicant / BCBC to block access for all other road users.
- High demand placed on electricity and water – this could affect supplies to residents – DCWW indicated as part of the pre-application consultation that insufficient capacity existed in the system to serve the development.

Adverse Impact on Environment (Biodiversity) and Visual Amenities of the Area

- Studies into biodiversity at the site are flawed, as they do not match the evidence - wildlife reports need to consider all habitats – long term disruption to wildlife in the area will be caused by the development – land was cleared before the application was submitted and prior to any appraisal work being carried out –has a comprehensive review of all species, including birds and habitats been undertaken – how will the development safeguard and enhance biodiversity.
- If planning was granted, the impact would be loss of trees including Oak, Hawthorn, Goat Willow, Silver Birch, Sycamore, Hazel, Ash, various bushes and shrubs. Clearing the

land would lead to the loss of the trees and plants which would have a detrimental impact on the wildlife as it would make them homeless
- environmental surveys carried out as part of the planning application process were taken on a piece of land somewhere around 100 meters away from the actual proposed build site.
- The plant and apparatus will be unsightly being raised above existing ground levels – this will be exacerbated as the proposed slab which will need to be raised above existing ground levels - the large building would contravene Articles 1 and 8 of the Human Rights Act
- The solar array will affect the outlook for Bryncethin residents

Green credentials of the scheme are questionable and viability of the project long-term

- Green hydrogen requires 100% renewable electricity - only 25% of the energy will be from renewables. Not green energy if production requires electricity from the national grid. General inefficiency in this method of hydrogen production especially when it is not fully providing its own energy from additional renewable capacity.
- increased traffic will off-set any 'green' gain – how does this development follow the Council's green strategy?
- The climate change statement, table 6 shows lifetime emissions are 75,903 to 87,732, if it is round to 90,000 that equates to a saving of 1 years' worth of emissions over the next 25 years. Does this represent a significant green gain?
- Viability of the scheme for the future – is hydrogen the long-term solution – similar hydrogen experiments across the world have collapsed due to lack of demand, viability and/or safety. It is therefore unlikely the facility will be commercially functioning at the end of its lifespan.

No benefits to the wider community

- Only 4-6 jobs being created by the development - the impacts of the project will be detrimental to local businesses and is likely to result in job losses far in excess of the jobs created by the HyBont project.
- Where is the demand locally for the supply of hydrogen?
- Lower emission vehicles are unlikely to significantly offset the tanker flow to take the Hydrogen to other sites
- Bridgend has no funding for a hydrogen fleet and given it is unable to participate in the project as a heat source, it should not be built in area that will cause distress to local residents for zero community benefit.
- Re-allocation of sports fields for solar array – no community benefit
- Biomass boiler at school will be replaced – installed at great cost

Site Drainage and Ground Conditions may not be suitable for development

- The site overlies old mining workings and a geological fault – instability could cause pipelines to fracture – adding to safety concern – solar farm on site of old workings
- Site affected by VHP Gas line – has this been considered?
- No adequate understanding of the pipeline crossing the river and flood risk at that part of the site has been demonstrated.
- Substantial localised flooding on Squire Drive is likely as a result of water run off down the access road.

COMMENTS ON REPRESENTATIONS RECEIVED

Many of the objections offered by residents align with the main considerations in the determination of the Application and will be addressed in the appraisal section of the report. The following comments are offered in response to other matters raised:

Procedural Concerns and Inconsistency in the Planning Submission: Residents are concerned that comments offered as part of the pre-application process have been ignored by RPS and Marubeni. It was clear from the public meetings and the representations made that the Application would be opposed by many within the community. Those objections have been offered as part of the application process and have been duly considered.

The Application was not accompanied by an Environmental Impact Assessment as the Application was not deemed to be EIA development. The Applicant company sought a screening opinion, and it was the view of officers that the likely effects of the development would not be so significant by virtue of the nature, size and location of the development. That view has not changed through the processing of the Application. It has been necessary for the Applicant company to provide technical information and reports to assess the impact on the environment, including biodiversity, pollution (noise air, etc), grounds conditions and landscape and visual impact.

Many objectors believe that a Hazardous Substance Consent (HSC) application should have accompanied the planning Application. An application for Hazardous Substances Consent under the Planning (Hazardous Substances) Regulations 2015 for the storage of up to 5 tonnes of hydrogen on site has been submitted to the Council, (P/24/82/HAZ refers) and remains undetermined. Revised information has recently been submitted and is currently the subject of consultation with Health and Safety Executive (HSE) . The Hazardous Substances Consent application has been submitted under separate legislation and there is no requirement to determine the submission together with the Planning Application. Ultimately both consents will need to be secured for the Hydrogen Production Facility to be operational. The HSC application will be referred to the Development Control Committee for consideration in due course.

The matter of conflict with Development Plan policy will be considered in the appraisal section but there is a suggestion by objectors that there is a conflict of interest as the Council is decision maker, landowner and part developer. In September 2023, the Council confirmed that it had withdrawn its financial support for the project because of concerns over, "*its inability to meet the significant financial commitments required*". The Council are not joint applicants and any decision regarding the sale of the land is taken outside the planning process. The sale of the land is not a planning consideration.

Apparent inconsistencies in the planning submission have been highlighted by residents regarding the size of the Facility (output) and whether the hydrogen pipeline is still part of the Application as it is still referenced in a number of planning documents. The Applicant's agent has confirmed that the electrolyser rating in terms of hydrogen output is measured in "MW Hydrogen at Higher Heating Value (MWH2HHV)" which is the preferred measurement of the UK Government. For this proposal, the maximum production of the 3 electrolysers is 5.2MWH2HHV i.e. 1.7 MWH2HHV per electrolyser; this is the maximum potential hydrogen output of the HyBont electrolysers, regardless of power input or electrolyser efficiency. The 5.2 MWH2HHV figure is often rounded to 5 MWH2HHV dependent on context. An alternative measurement for the 3 electrolysers is a total of 7.5 MW electrical ("7.5 MWe") which is an industry standard measurement relating to nominal electrical rating input to the electrolyser; actual power input is dependent on electrolyser efficiency. Additional auxiliary power will be required to be supplied to other equipment on site outside of the electrolysers (e.g. compressors, pumps, lighting systems, and equipment efficiency degradation over time) with a maximum power connection into the site of 10MWe, in alignment with the 10MVA electrical grid connection.

Although the hydrogen pipeline is referenced on some plans and documents it no longer forms part of the Application.

Despite claims by objectors the development is not of a scale to be considered as a Development of National Significance. The Developments of National Significance (Specified Criteria and Prescribed Secondary Consents) (Amendment) (Wales) Regulations 2016 capture those onshore wind generating stations with an installed generating capacity of above 50MW, as well as all energy generating projects between 10MW and 50MW. The development falls outside these thresholds.

Property Devaluation and Higher Insurance Premiums: planning is intended to protect the public interest so therefore private matters such as property value and higher insurance premiums are not material planning considerations.

Green credentials of the scheme are questionable and viability of the project long-term: Residents have questioned the green credentials of the project with the reliance on electricity from the national grid and the de-carbonising benefits of the project only being realised after 4 years. In addition, residents have questioned how the HyBont Facility can claim to be green if it is taking green generation that would have been utilised elsewhere – this is termed as '*additionality'*.

The amended Climate Change Statement submitted with the Application confirms that the project is facilitating the expansion of green hydrogen supply through the pairing of the Hydrogen Production Facility alongside a solar PV array, with remaining energy demand met through a grid connection through which renewable power may be supplied. Minimal energy will be supplied from wholesale grid electricity, which is anticipated to be required during periods of low renewable production combined with an insufficient quantity of stored hydrogen. The Applicant company suggest that the supply is necessary for the successful operation of the Facility. As the grid decarbonises in line with current policy requirements, emissions associated with grid electricity are anticipated to reduce, resulting in reduced operational emissions. The greatest source of emissions associated with the project over its lifetime will be from the construction of the solar PV array (Solar Farm) and it will take 4 years of the operation of the Facility to cover the emissions from construction. It is argued however that the construction of such energy infrastructure should be considered necessary as a means for the continued decarbonisation of the UK economy. The Applicant company maintains that to secure UK Government funding for this project, the project must produce hydrogen complying with the Low Carbon Hydrogen Standard.

As stated, the HyBont Facility will produce green hydrogen under the UK's Low Carbon Hydrogen Standard which does not have an '*additionality*' requirement for renewable power supply. The Applicant have indicated that the project will demonstrate '*additionality'* in green power by:

- The development of a directly connected 5MWp Solar PV array (Solar Farm) as part of the HyBont Facility.
- Using the flexibility benefits of HyBont's PEM electrolysers to quickly ramp-up and prioritise renewable power generation for hydrogen production that would otherwise be curtailed.
- Providing demand for future renewable power in which Upper Ogmore (Wind Farm) can be considered.

Planning Policy Wales states that the planning system should maximise renewable and low carbon energy generation from all technologies and at all scales to meet our future energy needs. This proposed development will make such a contribution.

POLICY CONTEXT

The relevant policies of the Local Development Plan and supplementary planning guidance are highlighted below:

Policy SF1	Settlement Hierarchy and Urban Management - Development will be permitted within settlement boundaries at a scale commensurate with the role and function of settlements – Main Settlement – Valleys Gateway* (*This area faces significant constraints and is therefore currently much less suitable for sustainable development than the other Main Settlements, as detailed in the Settlement Assessment, Spatial Options Background Paper and M4 Junction 36 Background Paper.
Policy SP1	Regeneration and Sustainable Growth Strategy - To deliver Bridgend's Regeneration and Sustainable Growth Strategy between 2018-2033, the Plan will make provision for: 68.8 hectares of employment land to accommodate up to 7,500 additional jobs.
Policy SP3	Good Design and Sustainable Place Making - All development must contribute to creating high quality, attractive, sustainable places that support active and healthy lives and enhance the community in which they are located.
Policy SP4	Mitigating the Impact of Climate Change – all development proposals must make a positive contribution towards tackling the causes of and adapting to the impacts of Climate Change.
Policy SP5	Development must be located and designed in a way that minimises the need to travel, reduces dependency on the private car and enables sustainable access to employment, education, local services and community facilities.
Policy PLA11	All development must be served by appropriate levels of parking in accordance with the adopted SPG 17 on parking standards. Consideration must be given to electric and Ultra Low Emission Vehicles.
Policy PLA12	Active Travel - Development must maximise walking and cycling access by prioritising the provision within the site and providing or making financial contributions towards the delivery offsite.
Policy SP11	Employment Land Strategy - Opportunities for economic growth will be facilitated by directing employment generating development to the most appropriate and sustainable locations, supporting expansion of existing businesses and ensuring strong spatial alignment between housing and employment growth. This holistic employment land strategy will allocate 68.8 hectares of new employment land to be brought forward and accommodate up to 7,500 additional jobs over the Plan period by allocating a portfolio of Employment Sites (refer to ENT1) with a combined 43ha of available land for employment purposes (B1, B2 & B8 uses). These allocations will provide flexibility and choice to deliver new employment on a range of sites across the County Borough.
Policy ENT1	Employment Allocations - to support the Employment Land Strategy, 68.8 hectares of available employment land is allocated for employment development at the following locations: Brynmenyn Industrial Estate - 2.0 hectares for B1, B2, B8 uses.
Policy SP13	Renewable and Low Carbon Energy Development - Renewable and low carbon development proposals which contribute to meeting national and local renewable and low carbon energy and energy efficiency targets will be permitted where: a) It can be demonstrated that there will be no unacceptable impacts on the natural and historic environment or local communities (such as noise and air pollution) and that no other unacceptable cumulative impacts will arise; b) The proposal (inclusive of its associated infrastructure) has sought to

	minimise the landscape and visual impact through its design and micro-siting, particularly where in close proximity to homes and tourism receptors; c) Proposals make provision for the appropriate restoration and aftercare of the land for its beneficial future re-use; d) The proposal can facilitate a connection to the grid network; e) There would not be an unacceptable impact on access and highway safety; and f) There would not be unacceptable impact on the amenity of residential properties or tourist accommodation.
Policy ENT12	Development proposals within mineral safeguarding areas, either permanent or temporary, must demonstrate that 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 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 SP17	Conservation and Enhancement of the Natural Environment - The County Borough has a rich and varied biodiversity with a broad range of species, habitats and unique, rich landscapes. These include the nationally important Glamorgan Heritage Coast, the outstanding historic landscapes of Kenfig and Merthyr Mawr Warren, and other regionally and locally important areas. Development which will maintain 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 1) The integrity of the County Borough's countryside; 2) The character of its landscape; 3) Its biodiversity and habitats; and 4) The quality of its natural resources including water, air and soil.
Policy DNP1	Development in the Countryside - all development outside defined settlement boundaries must ensure that the integrity of the countryside is conserved and enhanced. There is a presumption against development in the countryside, except where it is for: 8) Renewable energy projects.
Policy DNP5	Local and Regional Nature Conservation Sites - Development within or adjacent to a Site of Importance for Nature Conservation (SINC) must 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 DNP6	Biodiversity, Ecological Networks, Habitats and Species - all development proposals must provide a net benefit for biodiversity and improved ecosystem resilience, as demonstrated through planning application submissions. Features and elements of biodiversity or green infrastructure value should be retained on site, and enhanced or created wherever possible, by adopting best practice site design and green infrastructure principles. Development proposals must maintain, protect and enhance biodiversity and ecological networks / services. Importance must be given to maintaining and enhancing the connectivity of ecological networks which enable the dispersal and functioning of protected and priority species.
Policy DNP7	Trees, Hedgerows and Development - development that would adversely affect trees, woodlands and hedgerows of public amenity or natural/cultural heritage value, or that provide important ecosystem services, will not normally be permitted. Where trees are to be

	replaced a scheme for tree replacement must be agreed prior to the commencement of development, including details of planting and aftercare.
Policy DNP8	Green Infrastructure - Development proposals will be required to integrate, protect and maintain existing green infrastructure assets and to enhance the extent, quality, connectivity and multi-functionality of the green infrastructure network. Where the loss or damage of existing green infrastructure is unavoidable, appropriate mitigation and compensation will be required. All developments must seek to maximise, as far as practicable, the amount of green infrastructure on the site, as well as the interconnectedness of green infrastructure within and around the site to the wider green infrastructure network. Development must also maximise opportunities to achieve multi-functionality by bringing green infrastructure functions together. All major developments will be required to submit a Green Infrastructure Assessment
Policy DNP9	Natural Resource Protection and Public Health - 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) Water pollution; 5) Contamination (including invasive species); 6) Land instability; 7) Sustainable development of mineral resources; 8) Sustainable waste management; 9) 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. The use of construction phase Pollution Prevention Plans are encouraged, where appropriate, to demonstrate how proposals can prevent development water run-off from causing pollution of the water environment. All proposals within HSE consultation zones must also demonstrate the acceptability and need for development. All development in flood risk areas must be supported by a Flood Consequences/Risk Assessment and incorporate any mitigation measures required to avoid or manage increased flood risk.

Supplementary Planning Guidance 7	Trees and Development
Supplementary Planning Guidance 17	Parking Standards
Supplementary Planning Guidance 19	Biodiversity and Development
Supplementary Planning Guidance 20	Renewables in the Landscape

In the determination of a planning application regard should also be given to the local requirements of National Planning Policy which are not duplicated in the Local Development Plan. The following Welsh Government Planning Policy is relevant to the determination of this planning Application:

Future Wales – The National Plan 2040
Planning Policy Wales (PPW) Edition 12

WELL-BEING OF FUTURE GENERATIONS (WALES) ACT 2015
The Well-being of Future Generations (Wales) Act 2015 imposes a duty on public bodies to carry out sustainable development in accordance with sustainable development principles to act in a manner which seeks to ensure that the needs of the present are met without comprising the ability of future generations to meet their own needs (Section 5).

The well-being goals identified in the Act 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

The duty has been considered in the assessment of this Application. It is considered that there would be no significant or unacceptable impacts upon the achievement of well-being goals/objectives as a result of the proposed development.

THE SOCIO-ECONOMIC DUTY
The Socio-Economic Duty (under Part 1, Section 1 of the Equality Act 2010) which came in to force on 31 March 2021, has the overall aim of delivering better outcomes for those who experience socio-economic disadvantage. The duty has been considered in the assessment of this Application.

APPRAISAL
The main issues to be considered in the assessment of this Application are as follows:

- **Whether the proposed development is acceptable on a matter of principle having regard to Local and National Planning Policy**

- **Whether the existing road infrastructure can accommodate the development traffic (construction and operational) and whether the proposed access/parking arrangement are acceptable in terms of highway safety and the related policies and guidance**

- **Whether the proposed development will have any adverse impact on the living conditions of existing residents in the communities of Bryncethin and Brynmenyn with regard to a) safety and b) pollution, (noise, lighting and air) and to what extent could any impacts be mitigated through planning controls**

- **The effect of the respective developments on landscape character and visual amenity with regard to the surrounding areas and the amenities enjoyed by the residents**

- **Whether the proposed development will result in any significant loss of habitats or populations of species and whether the scheme will provide a net benefit for biodiversity.**

- **The impact of the development on local supplies of water and electricity and the effect of the development on the existing drainage systems and whether a sustainable drainage systems can be incorporated into development to enable the management of surface water**

- **Whether the ground conditions can support the development and whether the mitigation required is achievable through the grant of planning permission**

- **Whether the development would have any impact on any archaeological remains.**

As the Application comprises two distinct elements, the following appraisal section will consider the above listed issues in relation to the Hydrogen Production Facility and the Solar Farm. An appraisal of the private wire line will also be given but as the works will take place within the public highway or verges within the control of the Council, the impacts on the wider community are more limited. No consideration is given to the hydrogen pipeline as this element of the scheme has been omitted from the Application.

Whether the proposed development is acceptable on a matter of principle having regard to Local and National and Planning Policy

Green hydrogen production is recognised by Welsh Government as a low carbon technology that will increasingly play a role in meeting several of the Welsh Government's strategic objectives in terms of reduced reliance on fossil fuels and maximising the role of renewable energy. Solar photovoltaic electricity generating stations in Wales are already contributing renewable energy as part of the overall commitment to tackle the climate emergency and increase energy security.

Statute provides that this Application is to be determined in accordance with the provisions of the Development Plan unless material considerations indicate otherwise. The Future Wales National Plan 2040 (**FW**) is the highest tier of development plan and is focused on solutions to issues and challenges at a national scale. FW states that *"Wales can become a world leader in renewable energy technologies. Our wind and tidal resources, our potential for solar generation, our support for both large and community scaled projects and our commitment to ensuring the planning system provides a strong lead for renewable energy development, mean we are well placed to support the renewable sector, attract new investment and reduce carbon emissions*." This is supported by FW Policies 17 and 18. These provide a criteria-based approach to enable decision makers to balance the benefits of renewable energy against harm to people and the environment.

Policy 17, '*Renewable and Low Carbon Energy and Associated Infrastructure'*, emphasises that Welsh Government strongly supports the principle of developing renewable and low carbon energy from all technologies and at all scales to meet our future energy needs and states that decision makers must give significant weight to the need to meet Wales' international commitments and the Government's target to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency.

Policy 18 permits Renewable and Low Carbon Energy Developments of National Significance subject to satisfying eleven (11) criteria and the requirements of Policy 17. The cumulative impacts of existing and consented renewable energy schemes should also be considered.

In a section of Future Wales that considers the transition to low emission vehicles, the Welsh Government confirms that it will embrace the adoption of electric vehicles in an inclusive manner, supported by the necessary investment in charging infrastructure. It promotes an increase in the generation of renewable energy to support the increased demand for electricity. The Welsh Government will increase the use of electric vehicles in public sector fleets, as well as encouraging innovative approaches to reducing emissions in all transport sectors.

Battery electric vehicles currently offer the most immediate route to the transition away from petrol and diesel vehicles to zero and ultra-low emission vehicles. Other forms of electric and ultra-low emission vehicles are also being developed. The role of hydrogen fuel cell electric vehicles and biofuels are being considered. These technologies have challenges to address such as cost reduction and sustainability of fuels and the Welsh Government will support innovation and work with industry, academia and the public sector to develop new

opportunities.

The latest iteration of PPW, Edition 12, seeks to protect and enhance landscapes, habitats, biodiversity, geodiversity and the historic environment. PPW describes the benefits of renewable and low carbon energy, as part of the overall commitment to tackle the climate emergency and increase energy security, as being of paramount importance. In this context PPW explains that the planning system should integrate development with the provision of additional electricity grid network infrastructure, optimise energy storage and maximise renewable and low carbon energy generation.

PPW paragraph 5.7.1 confirms that the 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 bio methane and green hydrogen.

PPW paragraph 5.7.14 confirms that the Welsh Government target for the generation of renewable energy is:

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

Paragraph 5.9.19 of PPW 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.

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
- 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.

Paragraph 5.9.24 PPW 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 5.9.26 PPW 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.

The above mentioned National Policies have informed the policies of the Council's recently adopted Local Plan 2024. Up-to-date Local Development Plans (**LDPs**) are a fundamental part of a plan-led planning system and set the context for rational and consistent decision making in line with National Policies. A review of the two Application sites with reference to the policies of the recently adopted Local Plan follows:

Hydrogen Production Facility

The Hydrogen Facility element of the proposal is located within the main Valleys Gateway settlement of Brynmenyn, as defined by Policy SF1 Settlement Hierarchy and Urban Management of the Bridgend Local Development Plan (**LDP**) adopted in March 2024. This policy states that development will be permitted within the settlement boundaries at a scale commensurate with the role and function of settlements as set out in the hierarchy.

The policy notes that the Valley Gateway area faces significant constraints and is therefore currently much less suitable for development than the other Main Settlements. This settlement was ranked highly by the Settlement Assessment owing to the inter-connectedness of its sub settlements, high accessibility (including two railway stations plus links to the M4), prominent retail facilities and industrial estates. However, this area has accommodated substantial growth in recent years and there are now capacity issues running north to south at Junction 36 of the M4. The constraints present within this settlement area therefore render it far less suitable to accommodate sustainable development than others, notwithstanding its classification as a Main Settlement and broader role within the County Borough. The impact of the development on the local transport network has been considered in the Transport Statement that accompanies this Application. A summary of the Transport Statement is provided in **Appendix A** and will be considered again in this Appraisal section. The evidence does indicate that the additional traffic generated by this development would not be material when considered against the numbers of existing movements through the network and related junctions and therefore in broad terms the use does not conflict with Policy SF1.

The proposed Hydrogen Facility will be located on land that is allocated for employment purposes under Policy ENT1 of the new plan. Uses falling within Classes B1, B2 and B8 as defined in the Schedule to the Use Classes Order 1987 (as amended) will be permitted. Additionally, Policy ENT2(25) protects the employment function of existing business and employment sites. Objectors suggest that the proposed operation does not fall within any of the listed B uses.

General industrial B2 uses includes industrial process which can be reasonably considered to include chemical process such as electrolysis which is the key process that takes place on site. The hydrogen that is generated from splitting water into hydrogen and oxygen will also be stored and distributed from site – a use that falls within Use Class B8. At the scale proposed, the use has 'hooks' within each of the 3 B classes to a lesser or greater extent - B1(c), B2 and B8 activity.

The Applicant's agent maintains that if you consider the principle activities of the development, then it is a B2 use and is not 'contra' the allocation of the Application site. Research has shown that the inclusion of the words 'chemical treatment' in respect of B2 are commonly held to mean in relation to the chemical treatment of waste specifically.

As a comparable, the Applicant has referred this Council to the re-fuelling hub in Birmingham, (Tyseley Energy Park), which is extremely similar in locational context to Brynmenyn, being located in a dense industrial/commercial area, with residential on its boundary. This was consented as part of a wider outline permission for: the construction of new buildings for uses falling within Use Classes B1b (research and development), B1c (light industrial process), B2 (general industrial) and B8 (storage and distribution).

Having reviewed the submissions of residents and the Applicant's agent, it is considered that the proposed Hydrogen Production Facility accords with the allocating policy.

The site also lies within a Site of Importance for Nature Conservation (**SINC**), as defined by Policy DNP5. Development within or adjacent to a SINC must 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.

The wider impacts on biodiversity will be considered later in this report but in terms of the SINC, the submitted Ecological Impact Assessment recognises that the proposed Hydrogen Production Facility will require the removal of areas of low value grassland. Higher value woodland along the northern boundary habitat will be retained, along with the trees on the southern and eastern boundaries. New areas of grassland and tree and shrub planting will also be created and the management regime going forward will seek to enhance the biodiversity value of the retained habitats. The impacts of the development on the key characteristic of the SINC are relatively modest and do not represent a conflict with the Policy DNP5.

Part of the site is located within a Category 1 Sand & Gravel Mineral Safeguarding Zone as defined by Policy ENT12 of the LDP. Development proposals within mineral safeguarding zones, either permanent or temporary, will need to demonstrate that 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.

Based on the submitted ground investigation reports the quantity of minerals present are limited and are of little value.

On a matter of principle only, the development of the Hydrogen Production Facility accords with the broad national support for developing renewable and low carbon energy from all technologies and the specific allocating policies of the new Local Plan and Policy SP4 which requires all development proposals to make a positive contribution towards tackling the causes of and adapting to the impacts of Climate Change.

<u>Solar Voltaic Electricity Generating Station (Solar Farm)</u>
In relation to the Solar PV element of the proposal on land at Bryncethin, the site is partially located within the main settlement of Bryncethin as defined by Policy SF1 Settlement Hierarchy and Urban Management of the LDP. The site boundary also lies within Bryncethin Highways Depot (ENT2(24)). Policy ENT2(24) protects the employment function of existing business and employment sites. Whilst the red line boundary includes Bryncethin Highways Depot, the Design and Access Statement indicates that the development will be located on land adjacent to the BCBC Highways Depot. No part of the Solar Farm will be constructed on the Depot. As such, it is considered that the employment allocation will not be adversely

impacted.

Much of the site is located in the countryside and as such should be considered in the context of Policy DNP1. There is a presumption against development in the countryside but the Policy lists a number of exceptions which includes 'Renewable Energy Projects.' Countryside development must however be of a sustainable form with prudent management of natural resources and respect for the cultural heritage of the area.

The development of the Solar Farm connected to the Hydrogen Production Facility will contribute to meeting renewable energy generation targets contained in the UK and Welsh energy strategies and policies. Policy SP4 Mitigating the Impact of Climate Change states all development proposals must make a positive contribution towards tackling the causes of and adapting to the impacts of Climate Change. This will be achieved by the development.

The site is also located within a Category 1 Sandstone Mineral Safeguarding Zone as defined by Policy ENT12 of the RLDP. Development proposals within mineral safeguarding zones, either permanent or temporary, will need to demonstrate that:

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.

On the basis that solar farms borrow rather than use land, permissions are granted on a temporary basis that will require that the array and buildings be completely dismantled at the end of its life. Any land use change is temporary and reversible, and will not prevent future extraction of the mineral resource.

Given the contribution that the proposal will make in meeting renewable energy targets it may be appropriate to site renewable energy projects in the countryside; that support is not absolute and would need to address the criteria listed in Policies SP13 which are set out above in the Policy Context section of this report. These will be considered further in the following section of the report.

A number of objectors referenced this site allocation as an 'events area' under Policy REG12 (5) of the now lapsed Local Plan and expressed concern at the loss of an area that could have provided wider benefits to the community. From the planning history section of the report (above), Members will note that an application had previously been granted for playing fields on the land but the consent was never implemented and has lapsed. As part of the review for the new Local Plan (adopted March 2024), the evidence before the Council suggested the land was not required for the purposes previously allocated and the Policy REG12(5) was not carried forward. Whilst the objections are not without merit, the previous consent was never implemented and the determination of this Application must be against the relevant policies of the new Local Plan 2024.

In summary, the Solar Farm element of the proposed development will make a positive contribution towards tackling climate change and peak oil, particularly through the development of renewable energy in the form of solar PV and, on a matter of principle, only the use of the land as proposed is acceptable.

Whether the existing road infrastructure can accommodate the development traffic

(construction and operational) and whether the proposed access/parking arrangement are acceptable in terms of highway safety and the related policies and guidance

Hydrogen Production Facility

Considering the capacity of, and effects of low carbon energy technologies on the transportation network are requisites of National Policy. At a local level, the requirements are more specific with a need maximise the opportunities for active travel and public transport use whilst also ensuing that development is designed to provide safe and efficient access to the transport network. Measures to mitigate the impact of development on the road network should also be considered, (Policies SP3 and SP5 of the new LDP 2024 refer).

The Implementation and Delivery Appendix (Appendix 5) to the new LDP sets out the key issues, constraints, phasing and mitigation measures which are required to deliver proposals. For the expansion of Brynmenyn Industrial Estate, it is noted that the site is within 500m of an identified traffic congestion pinch point which gives rise to congestion and potentially air quality impacts. As such, a Transport Assessment/Statement will be required to be undertaken to evaluate the potential transport impacts of a development proposal.

Members will note from the representations received that many of the objectors have expressed concerns regarding the adequacy of the existing highway network to serve the additional traffic that will be generated by the development; the impact this will have on existing businesses including the Welsh Ambulance Service facility that is based on Brynmenyn and the general safety of all road users. More specific objections regarding the proposed access and the required changes to Squire Drive have also been offered.

A summary of the findings of the Transport Statement (**TS**) is set out in **Appendix A** to this report. It states that the Hydrogen Production Facility is a low trip generator, especially during its operational phase. It will be used to store and transport hydrogen and serve as a refuelling station, and will employ four full time staff members supported by an additional four corporate staff and specialist sub-contractors. Many of the vehicles accessing the Facility, it is suggested in the TS, are already on the network and are therefore not considered by the assessor to be new trips.

Officers in the Highways Development Control Section note that, given the bespoke nature of the development, no information exists within the TRICS (Trip Rate Information Computer System) database and the traffic numbers are based on first principles from the production capacity of the plant once operational. The TS indicated that that the Hydrogen Production Facility site would serve 28 HGVs being “20 Council Vehicles (Buses and Refuse Vehicles), and eight ‘Project Owned’ Vehicles (HGVs and Tube Trailers)”. This number of vehicles was broken down as:

Buses	15
HGVs	6
Refuse vehicles	5
Tube trailers	2

When the TA was produced, BCBC were intended to be an end user. The Council have however withdrawn from the project and the Applicant was asked to provide a review of the trip generation. Further information from the Applicant has indicated that:-

- The production facility will produce an average of 2 tonnes of hydrogen per day.
- The Hydrogen pipeline has been formally removed from the Application.
- 12m (40ft) tube trailers have a capacity of 0.7 to 1.0 tonnes of Hydrogen
- 6m (20ft) tube trailers have a capacity of 0.35 to 0.5 tonnes of Hydrogen

- Demand for hydrogen buses is 23
- Demand for HGVs is 6
- No demand for Refuse vehicles
- 5 Staff / visitors would be on site

It has been stated that the maximum number of vehicles the site would generate in a day would be

- 2 to 6 tube trailers
- 23 buses
- 6 HGVs
- 5 Staff & visitors

This gives a maximum daily total of a 40 vehicle trips which equates to 80 daily movements. The majority of the these would be spaced out throughout the working day and not all concentrated in the network peak hours.

The closest DFT traffic data counter to the site (Ref 40635) is situated on the A4065 just North of the roundabout serving the industrial estate and as such the majority of flows to the industrial estate are not included. The latest figures are:-

Year	Count method	Pedal cycles	Two wheeled motor vehicles	Cars and taxis	Buses and coaches	Light goods vehicles	Heavy goods vehicles	All motor vehicles
2023	Estimated using previous year's AADF on this link	11	27	7696	92	1710	135	9660

From this it can be calculated that the 80 daily movements generated by the development would be a non-material increase of 0.82%. This however would only be realised if all the traffic generated by the development was travelling in that direction which is extremely unlikely and, as such, the impact is reduced further by the natural split in movements on the network. As the location of the counter, just North of the roundabout, is not considered to include the majority of traffic to/from the industrial estate, the materiality of the development flows along the A4065 to the South of the roundabout will be reduced further.

Notwithstanding the above assessment, it is noted that the A4063 Corridor South of the development has historically been of concern to Local Members. Accordingly a further consideration of the impact of the development on this part of the Highway Network has been assessed using DFT Traffic counter 99577. This is located on the A4061, just South of its junction with Heol Canola. As would be envisaged this indicates higher background flows.

Year	Count method	Pedal cycles	Two wheeled motor vehicles	Cars and taxis	Buses and coaches	Light goods vehicles	Heavy goods vehicles	All motor vehicles
2023	Manual count	0	78	13591	145	3048	456	17318

Accordingly, even in the event that all traffic generated by this proposal was to travel to/from the South the 80 daily vehicle movements would equate to 0.46% increase which again would not be material. As outlined in TAN 18, as a broad guide the Welsh Government regards an increase in vehicle movements in the order of 5% as material in most cases.

It is appreciated that there are no restrictions on the classified highway network in terms of HGV movements and the site of the proposal which is located on the industrial estate, is allocated within the LDP for industrial uses.

Following discussion with Traffic Management colleagues it is not considered that any highway improvements could be justified by this development.

Policy SF1 does indicate that the Valleys Gateway Settlement is less suitable to accommodate development than the other main settlements because of the capacity issues running north to south at Junction 36 of the M4 but the Local Plan 2024 also recognises that the Valleys Gateway will be maintained as an important employment location, (Paragraph 4.3.51 of the LDP refers). An assessment of the traffic impacts has been undertaken and the impact from this development would not be significant.

For residents, congestion on the network is an existing problem and it is understandable that concerns have been expressed as to the potential of the development to exacerbate the situation. Any additional traffic created through the construction process will be for a temporary period and can be managed through an agreed Construction Management Plan. It is not however the function of the planning system to ensure that the convenience of the private car user is safeguarded from congestion, especially with regard to existing congestion. Furthermore, whilst developers may be required to pay the cost of any highway improvements where the need is directly created by their development, they are not required to pay for improvements to deal with existing deficiencies in the road system which would not be made worse by the development, as the evidence suggests for this proposal.

Overall, there is no basis to reject this Application based on the impact of the Hydrogen Production Facility on the highway network.

Access to the Hydrogen Production Facility will be from Squire Drive; a number of local businesses have objected on the basis that the road is not able to serve the development due to its width being constrained by on-street parking and the level of traffic movements associated with the existing businesses. The owners of adjacent businesses have also commented on the proposed tie-in arrangements of the proposed access road with the turning head onto Squire Drive. The submitted drawings indicate that a small section of the hammer head will be regraded to form the new entrance and to allow an acceptable gradient to be provided for the access road. Concerns that changes to the gradient of the access road could prejudice access to businesses have been raised.

Squire Drive which currently serves as access for six industrial units has a carriage width of approximately 7.3m and benefits from footways along both sides. This provides sufficient carriageway space to accommodate the development traffic. Issues of obstruction would be a Police matter but the introduction of a parking order could be considered by the Council if safety would be compromised. Local businesses are however unlikely to support any parking restrictions on the highway.

The drawings showing the proposed access road tying into the turning head on Squire Drive have been accompanied by topographical surveys of the existing highway and the finished arrangement. Highway Officers did share the concern of the neighbouring businesses and whether the changes to the gradient of the highway would indeed affect the thresholds between the public highway and the private access roads. Meetings have taken place with the Applicant's consulting engineers and assurances have been provided that an acceptable arrangement can be provided that will not prejudice users of the public highway or adjacent accesses. Members should be mindful that such works to the highway will be the subject of S111 agreement with all associated costs borne by the developer. An extensive engineering

check will be required as part of that process and it will be a condition of any consent granted that the access arrangements are agreed before any works commence on the construction of the Hydrogen Production Facility. In progressing the S111 agreement, officers will be mindful of the concerns of the adjoining businesses.

It is noted that this application includes a power cable connection between the Hydrogen production plant and the off-site proposed solar array. Portions of this connection navigate what is considered to be private land (some potentially under the control of the Authority. and some likely to be third party control) whilst other portions would be within maintainable highway. The level of detail on the proposed routes is limited however in the case of the routes through private land this is of no consequence to the Highway Authority. It is also understood that where apparatus is placed within highway there can be site specific reasons why the exact route needs to deviate along a particular section and as such the limited level of detail is not considered to be critical to the consideration of the application. Notwithstanding the above it is considered that the proposed cable connection constitute private apparatus and the developer is not afforded the same powers as a Statutory undertaker to place these in the highway. This is not however a matter of highway safety and falls outside the planning process. This would need to be resolved between the developer and the Highway Network Manager.

Overall, subject to the agreement and implementation of an access that achieves an appropriate gradient and does not prejudice the operation of the public highway (turning head on Squire Drive), the access arrangements onto Squire Drive are considered acceptable in terms of highway safety.

<u>Solar Voltaic Electricity Generating Station (Solar Farm)</u>

Residents in the vicinity of the proposed Solar Farm have objected to the development although they do not specifically reference the access arrangements.

Access to the Solar Farm will be from the A4061 Blackmill Road along an existing track adjacent to the Council's Bryncethin Highways Depot. This access is to be upgraded through a planning condition. Once operational, the Solar Farm will not require significant maintenance, except for occasional visits made by 4x4 vehicles or panel van vehicles. The TA indicates that the impact of maintenance vehicles will be negligible given the infrequent nature of maintenance visits. The same route will be used during the construction period and operational phase. The Outline Construction Environmental Management Plan confirms that no vehicle parking, loading or unloading associated with the Solar Farm construction or operation is to take place on the public highway, or within the BCBC Bryncethin Highways Depot.

The TS and supporting plans have shown that vehicles can access and egress the development site without issue and that view is supported by officers within the Highway Development Control Section. Conditions will be imposed to agree a detailed construction environmental management plan before development commences.

Whether the proposed development will have any adverse impact on the living conditions of existing residents in the communities of Bryncethin and Brynmenyn with regard to a) pollution, (noise lighting and air) and b) safety and to what extent could any impacts be mitigated through planning controls

In assessing applications for Renewable and Low Carbon Energy Developments planning authorities must identify ways to minimise impacts on local communities from noise and air pollution and to safeguard quality of life for existing and future generations. The local policy requirements set an equally high test to achieve the placemaking principles with such

projects only permissible where it can be demonstrated there will be no unacceptable impacts on local communities (such as noise and air pollution) – Policy SP13 LDP refers. All development must contribute to creating high quality, attractive, sustainable places that support active and healthy lives and enhance the community in which they are located. Planning applications must be supported through the submission of appropriate design and technical information to demonstrate that a development has avoided or minimized noise, air, and soil and water pollution and ensured that the viability and amenity of neighbouring uses and their users/occupiers will not be adversely affected.

Residents have offered a significant number of objections on the basis that noise from the movement of vehicles and the operation of the Hydrogen Production Facility so close to existing properties will disrupt sleep patterns and affect living conditions. In several responses to the most recent consultation, residents have suggested that the noise from the vents on the Hydrogen Production Facility will be like a gas turbine or jet engine. Concerns about the impact on air quality because of the additional traffic and emissions from the site have also been submitted.

A series of technical reports have been submitted in support of the Application in respect of noise, air quality, drainage and lighting.

Noise

RPS commissioned by the Applicant company designed a noise mitigation strategy for the proposed development with the initial noise impact assessment being undertaken in March 2023. It sought to identify the potential for an adverse noise impact at the existing sensitive receptors – residential properties on Davis Avenue, Rowans Lane and Ffordd Leyshon.

The RPS report identifies the main noise sources to be plant and HGV movements and these are listed in the table below:

Name	Unit Numbers	On Time
HV Substation	1	100%
Reciprocating Compressor	2	100%
Process Chiller	2	100%
Air Compressor	1	100%
Dispenser Vent	3	5 seconds per hour – during the daytime (1 second per bus)
MP1000	1	100% - During the daytime – not operational at night
Electrolyser Package		
Fin Fan Unit	3	100%
Chiller System	3	100%
TCS Pump	3	100%
Power Supply	3	100%
HGV Movements		
Diesel HGV*	1 per hour during the daytime	1 per hour during the daytime

Hydrogen Bus	5 per hour during the daytime	5 per hour during the daytime

*(*Members should note that there was an error in one of the tables in the latest Technical Noise Report which indicated HGV movements to the site through the night. The Applicant's agent has submitted a corrected noise report and a statement confirming that there will be no night-time HGV or bus movements on site nor are the dispenser vents expected to be in operation at night-time).*

Since the initial noise impact assessment, the Applicant has undertaken an extensive mitigation and design review of the development to reduce any potential noise impacts to a minimum. As part of this review, the noise consultants have investigated potential noise mitigation measures, alternative plant, site re-designs and undertook further acoustic modelling following discussions with plant manufacturers.

The summary section of the latest technical note confirms that the proposed development has been modelled based upon the worst-case scenario while including the proposed mitigation measures, (which includes an 8M high acoustic wall on the north-eastern and south-eastern boundaries of the central area.). The initial noise impact assessment found that the proposed Hydrogen Production Facility had the potential to have a low impact during the daytime period and up to a significant adverse noise impact during the night-time period. The latest technical note states that the development is unlikely to have any readily identifiable characteristics given the high ambient sound level and the existing industrial estate to the north. Furthermore, the proposed development will not cause any significant increases to the existing ambient levels during either the daytime or night-time periods. It also states that during the particularly sensitive night-time period residents would be inside their properties. The potential noise impact from the proposed development is therefore unlikely to be significant, as identified within the initial noise impact assessment.

Shared Regulatory Services have reviewed all the submitted noise assessments including the latest technical note and, based on the current layout and proposed noise mitigation measures which includes an 8m acoustic barrier with a minimum density of at least 15kg/m2, other enclosures and screens; the re-orientation of certain plant and the exhaust silencers, the Applicant has been able to demonstrate that the development will just meet but not exceed the maximum noise limit that Shared Regulatory Services would accept for this proposed scheme at night and is below an adverse impact when assessed in accordance with BS4142:2014. Day-time operations have not been a concern throughout the assessment of the Application. Accordingly, no objections have been offered but this is subject to conditions which will require the following:

- The combined noise rating levels from all operations and fixed plant and equipment shall not exceed the levels set out in the tables in condition 23

- The sound power levels for each noise source shall not exceed the levels specified in the Applicant's noise report and prior to installation the Applicant will be required to demonstrate compliance with those levels

- Before any production of hydrogen, the 8m high wall shall be erected but the details of construction will need to be agreed before any development commences

- At the commissioning stage, the Applicant will be required to undertake a further noise assessment to demonstrate that the noise levels in the tables are being met in practice and if the levels are not being achieved, additional mitigation will be required

- Within 21 days of the receipt of a complaint about noise emissions, a protocol shall be agreed with the Council for further noise assessments to be undertaken and mitigation agreed and a further noise assessment following the implementation of the noise mitigation works.

To suggest that the introduction of this development so close to existing properties in the community of Bryncethin would have no impact on amenity would be unreasonable. This greenfield site currently gives nil detriment and therefore any Development (construction and operation) would create noise above existing levels. That said, residents are already affected by established businesses on this estate and the movements of vehicles on the A4065. Planning seeks to achieve that careful balance of delivering commercial uses on sites allocated for such uses whilst also reasonably safeguarding the amenities and living conditions of existing residents. Subject to the imposition of planning conditions that will control operations on site and consequently the noise levels, that balance can be achieved, and the requirements of the regulating policies can be met. The purpose of planning conditions is to enhance the quality of development and enable this development proposal to proceed where it would otherwise have been necessary to refuse planning permission.

Air Quality

The submitted Air Quality Assessment considers the air quality impacts from the construction and operational phases of the development. For the construction phase, the most important consideration is dust. Without appropriate mitigation, dust could cause temporary soiling of surfaces, particularly windows, cars and laundry. The mitigation measures recommended in the report should ensure that the risk of adverse dust effects is reduced to a level categorised as 'not significant.'

For the operational phase, arrivals at and departures from the Hydrogen Production Facility may change the number, type and speed of vehicles using the local road network. Changes in road vehicle emissions are the most important consideration during this phase of the development. Detailed atmospheric dispersion modelling has been undertaken for the first year in which the development is expected to be fully operational, 2025. Pollutant concentrations are predicted to be well within the relevant health-based air quality objectives at the façades of existing properties. Using the criteria adopted for this assessment, the operational air quality effects are considered to be 'not significant' overall.

Colleagues in the Environment Team of Shared Regulatory Services note that from the production process, Hydrogen and Oxygen emissions will be created as a biproduct of the process. Assessments into the impact of the vented gases confirm there to be no credible risks associated with toxic effects from the operations on site. There are therefore no concerns regarding the production process in relation to harmful emissions and any risks to local air quality.

It is noted that the development may change the number, type and speed of vehicles using the local road network. Dispersion modelling has been carried out to assess this impact on local air quality. The approach to the air quality assessment is consistent with the Environmental Protection UK (**EPUK**) & Institute of Air Quality Management (**IAQM**) Land-Use Planning & Development Control: Planning for Air Quality document. The modelling assessment has found that there will be a negligible impact on local air quality during the operational phase of the development for all pollutants. There are no constraints to the development in the context of air quality.

Construction phase dust impacts have been assessed and mitigation measures recommended. As a condition, it is recommended these measures are included within a Construction Environmental Management Plan (**CEMP**) for the site.

Based on the technical evidence, the proposed Hydrogen Production Facility will not have an adverse impact on air quality during operation and subject to conditions, the impacts during the construction phase can be managed.

Lighting (external)

External lighting will be required as part of the Hydrogen Production Facility and will consist of the following:

- 'Street lighting' for the access road and internal roads 24/7 for security/safety.

- Refuelling points & admin building lighting during 'Business Hours' (to be defined exactly dependent on customer demands, but are not expected to be 24/7); and

- Occasional maintenance lighting inside the perimeter fence.

6m and 8m high columns will be erected around the boundaries of the site and the inner compound. All lighting will be inward facing with the submitted 'External Lighting Plan' indicating that light spillage beyond the site will be limited. In the interests of protecting the amenities of residents and minimising the impact on the bat population in the vicinity of the site, a condition will be imposed requiring the agreement of the final design of lighting before any development commences.

Public Safety

As expected, the production and storage of hydrogen on the Brynmenyn site has generated significant public concern. The explosive nature of the gas; its storage and transportation within a predominantly residential area, the risk to the safety of businesses and residents and the impact on property values have all been offered as objections to the scheme. More recently an objector has suggested that the separation distance between the site and existing buildings (houses and businesses) would not accord with the Explosive Regulations 2014. The track record of the Applicant company in complying with health and safety regulations has also been highlighted by objectors although this is not a material factor. From the representations received from the community whatever regulatory framework will govern the Hydrogen Production Facility, they consider the Facility to be too close to houses and businesses – the perceived risk of an accident is too great.

Although public safety is not referenced within the National and Local Policy framework, Welsh Government Guidance does indicate that the effects of a development on health and public safety are possible material considerations, and, in principle, public concerns in relation to such effects can be material to a decision, (Development Management Manual 2015 refers).

Mindful of the concerns of the community which were expressed as part of the pre-application consultation, the Applicant company have provided a summary of how the design of the Hydrogen Production Facility has considered public safety:

'The facility at Brynmenyn is a small-scale hydrogen production site, similar in scale to a petrol station and other hydrogen production facilities operating in urban environments in the UK and Europe (including Tyseley in Birmingham) with no reported safety incidents.

The facility is not a major industrial facility and will have the same stringent safety measures applied to it as sites such as petrol stations. A range of measures have been incorporated into the safety-led design.

Facility design:

Safety is of paramount importance and will be built into the design of the HyBont green hydrogen project. To ensure the safety of the design, industry recognised safety reviews will be carried out throughout the facility design and construction. Safety is at the forefront of all considerations in the design, construction and operation of the facility, with risks identified and eliminated where possible and appropriate safeguards put in place for residual risks. There are a wide range of safety measures incorporated into the design of the different components of the green hydrogen production and refuelling facility to prevent hydrogen leaks and potential ignition. This includes:

- *Production and storage areas being only accessible to trained staff, as well as systematic maintenance checks following approved methods. This is key to eliminating potential ignition sources, such as flames or sparks.*

- *The plant control system will be designed to ensure abnormal conditions and malfunctions are detected and appropriate automatic controls will safely shut down the plant, if needed to prevent an accident. For example, early warning systems and alarms as well as the use of fire and gas leak detection systems, safety relief valves, isolation valves and hydrogen and oxygen vents to dispel gas safely.*

- *Safe construction practices to avoid potential risks. For example, to reduce the risk of small hydrogen leaks, the number of mechanical joints on hydrogen pipework will be minimised and any joints that are required will be fully welded where possible – this lowers leak risk compared to mechanical connections e.g. bolted joints. Where welded connections are used, welding will take place in a controlled factory environment or on site by qualified welders in accordance with the applicable design code.*

- *Regular, proactive, rigorous and systematic maintenance checks (such as equipment calibrations and material quality) will ensure equipment and piping are reliable at all times and can perform safely.*

- *In the unlikely case of a major hydrogen leak, a range of safety measures will be included, such as escape routes, safety equipment, fire and gas detection systems (suitable for hydrogen) and firefighting systems.*

Canopy design:

As hydrogen is the lightest element on earth, in the unlikely event of a leak it would travel upwards and disperse rather than "creeping" along the ground like heavier gases. For this reason, there will not be a building or roof over the storage or production areas. Therefore, in the unlikely event of a leakage, gas will escape upwards into the atmosphere and dissipate. Canopies over refuelling station forecourt areas will take this into consideration and will be designed to protect the drivers from the elements whilst refilling, in line with normal fuelling stations, to ensure they are not distracted or rushing to return to their vehicles.

Site layout:

- *The hydrogen production equipment is located in an area that is not accessible to the public.*
- *The hydrogen storage tanks will be located a safe distance from the high voltage electrical substation.*
- *A one-way traffic system is proposed to minimise potential risk of collision.*
- *There will be an exclusion zone around the refuelling area, with a suitable queuing system implemented.*

Fire walls:
Each of the hydrogen storage tanks and the hydrogen production equipment will be surrounded by fire walls so, in the unlikely event of a fire, the fire will be contained and will not spread to the other storage tanks. The fire walls will act as a physical barrier to protect the hydrogen storage and production areas from external hazards.

Qualified/experienced staff:
To help ensure the highest quality design and build, Marubeni has engaged with the supply chain to identify and select an experienced Engineering Procurement and Construction (EPC) Contractor with a proven track record of developing hydrogen plants of similar scale. The contractually binding design specifications only allow for proven technology and equipment with an extensive record of safe operation to be installed at the site.

Mott MacDonald, as technical advisor to Marubeni Europower, has extensive experience in the design of hydrogen production facilities at locations in the UK and Europe. Mott MacDonald is currently advising the UK government on the safe transition to a hydrogen economy.

All staff working onsite will be fully trained by the EPC contractor to safely operate and perform maintenance activities on the specific equipment installed onsite, in line with regulations and safe practice methods. Operators will be specially trained to handle hydrogen during day-to-day operations and also during an emergency response such as a leak.

External audits
The UK has a rigorous safety record with the storage and distribution of gases and flammable materials particularly at a commercial/industrial level. Prior to the facility becoming operational, independent safety reviews will be completed as required for regulatory bodies and insurers. The operator of the facility will implement procedures and processes to ensure the ongoing safe operation of the facility. To ensure that these procedures are adhered to, the operator will carry out audits. In addition to this, the Health and Safety Executive, the national regulator for workplace health and safety, will carry out inspections to ensure that standards are adhered to".

The Applicant company have also produced a table which details the permits and licences required outside the planning process before works can commence on this development:

Name	**What is it required for (What the permit covers)**	**When the permit is required**	**Where do we need to obtain it from?**
Coal Authority Permit	The Coal Authority Permit is a regulatory framework in Wales that is designed to give permission to enter, disturb or change coal mines or coal managed or owned by the Coal Authority that is on your property. This includes: • coal seams under your property • coal workings, such as existing mine tunnels • mine entrances The Coal Authority Permit process requires a risk assessment and	Prior to Construction	Coal Mining Authority

	works method statement to ensure any works on Coal Authority risk areas are compliant with Coal Authority requirements and typically requires 3 weeks to be obtained.		
Trade Effluent Consent	Trade Effluent Consent is a legal permission or authorization that allows HPF site to discharge liquid waste or effluent from their premises into the public sewer system. To obtain Trade Effluent Consent, businesses must submit an application to the local water company or sewerage authority, providing detailed information about their operations and the type and volume of effluent generated. The water company will assess the application and set appropriate limits and conditions for the discharge of the effluent to ensure discharges are appropriate. HyBont requires a finalised detail layout and specification of the site to apply; Welsh Water have indicated there is adequate capacity in the combined sewer under Brynmenyn to accept TEC (subject to the Consent being granted).	Prior to Commissioning	Welsh Water
Consents to work on the local roads/highways (if required during construction)	A consent to work on local roads or highways refers to the permission granted by the relevant local highway authority (BCBC) for construction, maintenance, or repair work to be carried out on a public road or highway. This consent is typically required to ensure that the work is carried out safely and does not cause undue disruption or inconvenience to road users. The local authority will then review the application and assess the potential impact of the work on road users, residents, and businesses in the area. They may also require the applicant to provide additional information or documentation, such as a traffic management plan, before granting consent. Once consent is granted, the applicant is typically required to comply with any conditions or restrictions.	Prior to Construction	BCBC
Permission to work within vicinity of Welsh Water mains (and any other	Permission to work within the vicinity of or near a water company mains refers to the authorisation granted by Welsh Water for construction, maintenance, or	Prior to Construction	Welsh Water

assets in the area	repair work to be carried out near their water mains or infrastructure. The process for obtaining permission to work near a Welsh Water asset varies depends on the location and scope of the work, but typically involves submitting an application to the water company that outlines the details of the proposed work, such as the location, duration, and nature of the work, as well as any measures that will be implemented to protect the water company's assets.		
Environmental Permit	An environmental permit in Wales is a legal document issued by the Natural Resources Wales (NRW) that authorizes an industrial facility operator to carry out activities that have the potential to cause pollution or harm to the environment or increase flood risk. These activities can include operating industrial processes, handling waste, and discharging effluent to water or air. The purpose of an environmental permit is to ensure that the activities are carried out in a way that protects the environment and human health. The permit sets out specific conditions that the operator must comply with, such as emission limits, monitoring requirements, and reporting obligations.	Prior to Commissioning/Operation	NRW
Control of Major Accident Hazards (COMAH) Consent	Control of Major Accident Hazards Regulations are a set of legal requirements that aim to prevent and mitigate the effects of major accidents that involve hazardous substances. The regulations apply to businesses that handle or store large quantities of hazardous substances in the UK. The COMAH regulations require businesses to assess the risks associated with their activities and to take measures to prevent or reduce the likelihood of a major accident occurring. Businesses are also required to have an emergency response plan in place in case of a major accident. It is broken down into two tiers: • Upper Tier: 50 tonnes • Lower Tier 5 tonnes • The HyBont facility is not expected to be require classification as either a lower-tier or upper-tier COMAH site.	Prior to Commissioning/Operation	Health and Safety Executive
Hazardous Substances	The Hazardous Substances Regulations (HSR) in the UK are a	Prior to Commissioning/Operation	BCBC (Hazardous

Consent	set of regulations that provide specific requirements for the storage and handling of dangerous and hazardous substances in the workplace. A Hazardous Substances Consent application shall be assessed in accordance with the Planning (Hazardous Substances) (Wales) Regulations 2015 by the Hazardous Substances Authority (HSA) which is usually the Local Planning Authority. The Health and Safety Executive shall be consulted as part of the process and advise the HSA on whether consent should be granted. Their advice aims to mitigate the effects of a major accident. The HSE look at the hazards and risks that the hazardous substance may present to people nearby and also take into account existing and potential developments in the area.		Substances Authority), advised by HSE (Health and Safety Executive)
Sustainable Drainage Application Board (SAB)	The Sustainable Drainage Application Board (SAB) Application is a type of planning application required in Wales for development proposals that involve drainage systems. The SAB application is a part of the Sustainable Drainage Systems (SuDS) approval process, which is designed to manage surface water runoff from developments and promote sustainable drainage practices.	Prior to Construction	BCBC
Gas Shipper Licence	The Gas Shipper Licence is an operational licence required for gas producers to inject gas into or extract gas out of a gas pipeline under the Gas Act 1986 (in which hydrogen is defined as a gas within the meaning of the Gas Act)	Prior to Commissioning/Operation	Ofgem
Gas Transporter Licence	The Gas Transporter Licence is an operational licence required for gas network operators to convey gas through pipes to any premises within an area under the Gas Act 1986 (in which hydrogen is defined as a gas within the meaning of the Gas Act	Prior to Commissioning/Operation	Ofgem
NGED Grid Connection: G99 Connection Agreement	G99 connection agreement required for power generators to connect on to National Grid Electricity Distribution network as per Electricity Networks Association Engineering Recommendation G99: Requirements for the connection of generation equipment in parallel with public distribution networks on or after 27 April 2019	Prior to grid connection works starting	National Grid

On the specific concern regarding the scheme's compliance with the Explosive Regulations 2014, the Applicant company have responded as follows:

COMAH (Control of Major Accident Hazards Regulations 2015), ensure that hydrogen storage and handling are subject to risk assessments, safety protocols, stringent regulatory requirement adherence and emergency measures to prevent or mitigate explosion risks, all of which shall be demonstrated by the HyBont project team.

HyBont shall deliver the project in compliance with best practice and lessons learned, considering all applicable legislation and regulatory requirements, we will demonstrate this through the following:

1. Hydrogen's Classification:
Hydrogen is not an explosive by itself, but when mixed with oxygen or air, it can form an explosive atmosphere. In this sense, it is subject to controls regarding explosive atmospheres, which can lead to explosion hazards.

Hydrogen is generally regulated under flammable gas and hazardous material regulations, rather than directly under explosive regulations unless it creates an explosive atmosphere.

2. Control of Explosive Atmospheres:
Explosive Atmosphere Regulations - These are closely related to the Explosives Regulations and deal specifically with the prevention of explosions in atmospheres where gases, vapours, or dust can ignite. Hydrogen storage, especially in industrial settings, can lead to the formation of ATEX (Atmosphere Explosives) zones, where explosive atmospheres could occur.

The Explosives Regulations 2014 require organisations storing or handling substances that can cause explosive atmospheres to assess the risk and take measures to prevent or mitigate the effects of such explosions.

3. Licensing and Storage:
If hydrogen is stored in quantities or under conditions that might result in an explosive risk (e.g., in confined spaces or at high pressure), it may fall under licensing requirements like explosives, HyBont is unlikely to fall within this category due to a pressure of 500 bar, the higher ratings in line with regulatory requirements are 700 bar or higher.

Facilities must have risk assessments, explosion protection measures, and safety distances in place to prevent incidents involving hydrogen.

4. Health and Safety at Work Act and Control of Major Accident Hazards (COMAH):
Hydrogen storage may also be subject to COMAH regulations if large quantities are involved, due to the potential for major accidents involving explosive or flammable substances. This is especially relevant for facilities handling large volumes of hydrogen, where an uncontrolled release could lead to an explosion.

In the case of HyBont, there will be a maximum of 4.9 tonnes on site at any one time with a stored capacity of 1.5 tonnes, therefore assuring that HyBont is not a COMAH site.

5. Explosive Risk Assessments:
Employers are required under the Explosives Regulations and related laws to conduct risk assessments for hydrogen storage and handling, focusing on the prevention of explosive atmospheres and safe practices to minimize ignition sources (e.g., electrical sparks, static electricity).

DSEAR (Dangerous Substances and Explosive Atmospheres Regulations) also apply, particularly when hydrogen is stored in environments where it could mix with air to form an explosive atmosphere.

6. Safety Measures and Storage Practices:
Hydrogen storage must include ventilation, leak detection, flame-proof equipment, and proper signage to warn of potential explosive risks.

7. Accident Prevention:
The Explosives Regulations 2014 require facilities to have emergency response plans for potential explosions or other major incidents. These plans must cover scenarios where hydrogen might cause or contribute to an explosion.

8. Safe Distancing
Whilst there is no specific HSE guidance for hydrogen installations currently, HyBont considers industry guidelines/best practice. and takes a robust bottom-up approach to ensure qualitative and quantitative assessment of process hazards including assessment of safety distances, that assure compliance to HSE regulations and Approved Codes of Practice (ACoP.)

The Health and Safety Executive have confirmed that the Explosives Regulations 2014 (**ER2014**) are not applicable to the storage of hydrogen. As such the safe separation distances cited in the Explosives Regulations 2014 would not need to be applied in this situation. This is because hydrogen does not meet the definition of either an 'explosive' or an 'explosive substance' as they appear in Regulation 2 of the Explosives Regulations 2014.

"The definition of an explosive appearing in ER2014 specifically states that explosive substances for the purpose of the regulations do not include '…a substance or preparation in a solely gaseous form or in the form of vapour…' and that explosives comprise explosive articles and substances which would if packaged for transport, be classified in accordance with the United Nations Recommendations as falling within Class 1. Hydrogen gas is a dangerous substance which would if packaged for transport, be classified in accordance with the United Nations Recommendations as falling within Class".

It is evident that the regulatory framework controlling the operation of a hydrogen production facility is extensive and the design of the scheme will have to accord with the legislative requirements outside of the planning regime. Case law suggests that where a regulatory regime exists to deal with an issue raised by a planning application, it is open to a Local Planning Authority to place reliance upon the effective operation of that regime in determining an application for planning permission. However, the Local Planning Authority cannot simply ignore the issues in questions raised by objectors. It must however be satisfied that the other regulatory regime(s) are capable of regulating the relevant issues. Based on the Applicant's submission such a regulatory framework exists and indeed other regulators will be considering safety and the effect on the environment of the proposal.

The planning system still has an important part to play, for example in deciding whether the development is appropriate for a particular location, having regard to the relevant National and Local Plan policies and all other material considerations. The grant of planning permission does not however remove the need to obtain any other consents nor does it imply that such consents will be forthcoming. Planning guidance on such proposals is limited – there is no minimum distance specified between such a use and existing properties and businesses. The land is however allocated for industrial uses and the production of hydrogen does fall within that broad use category. On matters of health and safety, the Local Planning

Authority will be relying on the regulations outside of the planning legislation to manage the production, storage and transportation of hydrogen for this development.

Whilst fully appreciating the concerns of residents, there is no evidence before the Council to indicate that the risks to health and safety are so material and cannot be safeguarded through other legislation as to justify resisting an industrial use on land allocated for such purposes.

Solar Voltaic Electricity Generating Station (Solar Farm)

The technical reports submitted in respect of noise, air quality and lighting also had regard to the proposed Solar Voltaic Electricity Generating Station.

Noise

In terms of noise, the assessment recognises that the development will introduce new noise sources to the area in the form of the new substation, 2 transformers and the photovoltaic inverters, which convert the variable direct current (DC) output of the photovoltaic solar panels into alternating current (AC) which can be fed into a commercial electrical grid or used by a local, off-grid electrical network. Properties on Dennis Place will be approximately 113m to the nearest noise source.

The Noise Report concludes that the levels of sound arising from the operation of the Solar Farm facility will not result in adverse impacts, significant or otherwise, at any of the nearby residential properties when considered with BS 4142:2014+A1:2019 and also criteria set by Shared Regulatory Services. It is therefore considered that the proposed development is compliant with the requirements of National and Local planning policy and noise should therefore not be considered a material issue in terms of planning.

Shared Regulatory Services note that the predicted rating noise level from the Solar Farm following the selection of quieter equipment and re-design of the site, ranges from -4 and -21dB below background levels and is well within acceptable limits. Accordingly, there are no concerns that noise from its operation will affect the living conditions of the nearest residents. A condition will however be imposed requiring the combined noise rating level from all operations and fixed plant and equipment at the site to accord with levels specified in noise limits set by this Council.

Lighting

There is no indication on the submitted plans that lighting will be required as part of the Solar Farm development although CCTV cameras will be erected in the vicinity of the site entrance as part of the required site security measures. Final details of the design, scale and location will be the subject of a planning condition should the Council be minded to approve the development.

Public Safety

No objections on the grounds of health and safety have been offered by residents in respect of the Solar Farm and there is no evidence of any risk posed by this form of development.

The effect of the respective developments on landscape character and visual amenity with regard to the surrounding areas and the amenities enjoyed by residents

In assessing applications for Renewable and Low Carbon Energy Developments planning authorities must identify ways to minimise impacts on the natural environment. In terms of

local policy such development will only be permitted where it can be demonstrated that there will be no unacceptable impacts on the natural environment and the proposal (inclusive of its associated infrastructure) has sought to minimise the landscape and visual impact through its design and micro-siting, particularly where in close proximity to homes, (Policy SP13 LDP refers). Having a design of the highest quality possible whilst respecting and enhancing local distinctiveness and landscape character will contribute to the placemaking objectives established by Policy SP3.

Hydrogen Production Facility

Objections on the basis that the Hydrogen Production Facility will be unsightly when viewed from the nearest residential properties and users of the A4065 have been submitted. In addition, it has been maintained by residents that the loss of the former claypits site to the Solar Farm will diminish and devalue the outlook for many residents in Bryncethin and a wider area.

As set out in **Appendix A**, a Landscape and Visual Impact Assessment (**LVIA**) has accompanied the Application and has considered the respective impacts of two main elements of the proposal during their construction and operational phases. Landscape and visual effects are assessed separately, although the procedure for assessing each is linked. A clear distinction has been drawn between landscape and visual effects as described below:

- Landscape effects relate to the effects of the Proposed Development on the physical and other characteristics of the landscape and its resulting character and quality.

- Visual effects relate to the effects on views experienced by visual receptors (e.g., footpath users, tourists etc) and on the visual amenity experienced by those people.

The methodology has followed the guidance provided by the Landscape Institute and the findings of the assessment are accepted. It is noted that the landscape mitigation has been embedded into the overall project design and has been formulated in order to minimise potential landscape and visual impacts and maximise enhancement of landscape features, landscape character and biodiversity of both sites.

The LVIA includes a summary of the landscape and visual effects on the respective elements of the development. It notes that the Hydrogen Production Facility is proposed on an open grassland on the edge of the existing settlement, bounded by a mix of trees and woodland. In landscape and visual terms, the LVIA suggests that the development will be seen as extension to the industrial estate with the scale of buildings being relatively low lying.

As indicated in earlier sections of this report, the height of the buildings and plant will range from 5m (substation building) to 7.2m (cowls on top of electrolysers) to the vents at 11.3m from the finished slab level. As part of the revised submission, an 8m high wall is proposed on the south-eastern and north-eastern sides of the central part of the site which will house the main plant and equipment.

The LVIA acknowledges that key to minimising the impact of the development will be the retention of the trees on the eastern and southern boundaries. This landscape feature will screen the development site from users of the A4065 and the residential properties to the east. The group of ash, sycamore, willow and oak detailed "***G41***" in the Tree Survey Schedule are critical in this regard. The Tree Survey report does indicate '*partial removal to facilitate the developmen*t,' with this being illustrated on the drawing (Figure 11) below:

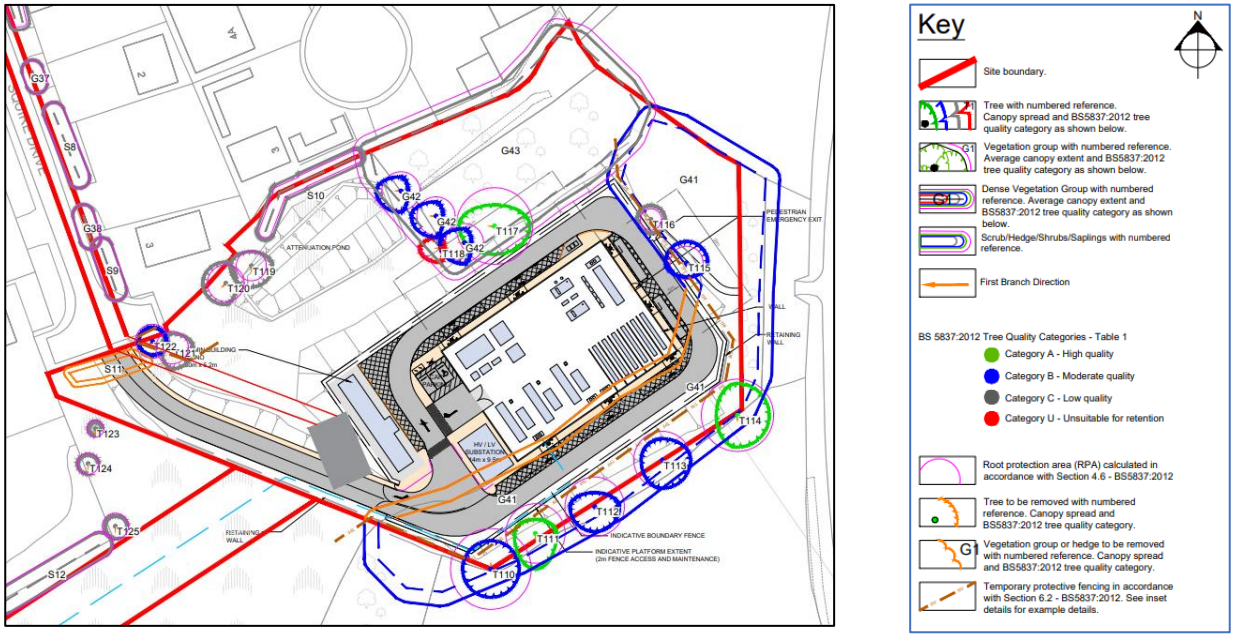

Figure 11: Extract from Tree Protection/Tree Removal Plan

Some works within G41 have already taken place but the latest plan confirms that the main groups of trees along the key boundaries will be retained and enhanced with new planting. Engineering works will be required to form the plateau on which the hydrogen plant will be constructed and there was concern that such works could undermine the land around the retained trees, resulting in further tree removal. The latest plans indicate that the works will lie outside the root protection areas of the retained trees however it will be a requirement of this consent that the developer agrees a detailed Arboricultural Method Statement and Tree Protection Plan before any development commences. Consideration will also be given to the making of a tree preservation order (**TPO**) to offer formal protection to all trees in and around the hydrogen plant. A TPO does exist on the group of trees in the northern part of the site but apart some removal to allow the construction of the access, the trees would appear to unaffected by the development.

Based on the evidence in the form of the original LVIA the visual impact of the development on the amenities of the area, and particularly those enjoyed by the residents of Davis Avenue, Rowans Lane and users of the adjacent road should not be adversely affected. The introduction of new plant and in particular the 8m high wall around the Hydrogen Production Facility necessitated a review with specific reference to the operational effects on viewpoints from the A4065 which is representative of views from some properties on Rowans Lane and Davis Avenue.

Cross-section drawings and visualisations of the site when viewed from the south-east and east have been submitted in addition to the Landscape Visual Impact Assessment. Extracts are re-produced below:

Figure 12: Section and Visualisation View from South-East A4065

Figure 13: Section and Visualisation View from East A4065

The landscape assessor indicate that in the winter of Year 1 following the completion of the development, the substantial tree line to the southern/eastern boundary, which is being retained, would screen potential views to the majority of the completed Hydrogen Production Facility. In winter months, with the trees and other vegetation devoid of leaf cover, there may be glimpsed heavily filtered views to a small part of the Development from a small section of the A4065 heading north towards Brynmenyn, the roadside footway and neighbouring residential properties. It is the assessor's view that any small parts of the proposed development seen in heavily filtered views would be of the acoustic barriers, with no discernible views of the structures beyond, within the main body of the development. With an appropriate colour selection, i.e. a muted green, being selected for the 8M high acoustic wall, the assessor suggest that any views to it would not represent an obvious feature within available views and would not have a marked affect upon the baseline view which would remain largely unchanged even in winter.

As the years pass by, the intervening vegetation, retained and managed as part of the Development, would be in full leaf further preventing any possible views. Where there are gaps, a small part of the development would be discernible. Similarly, to winter views, this would be to small sections of the acoustic barrier only. As stated above, using an appropriate green colour for the barrier would blend it into the retained vegetation. As a result, views to it would largely go unnoticed. Overall, the effects would be not significant.

Based on the recently submitted drawings and supporting LVIA, the Hydrogen Production Facility and the proposed 8m high acoustic wall will have only a limited impact on the visual amenities of those residents of Davis Avenue and Rowan's Lane that overlook the eastern boundary of the site and users of the A4065. Any impacts can be reduced further with the careful management of existing trees along with new planting. It is anticipated that no occupiers of residential properties have the potential to experience a degree of harm sufficient to make considering private views a public interest matter.

Solar Voltaic Electricity Generating Station (Solar Farm) – landscape character

The LVIA includes an assessment of the sensitivity of the relevant landscape character to the proposed development and this is particularly relevant to the Solar Farm site. It considers both the susceptibility of the landscape to the development and the landscape's value and has been supported by fieldwork.

The Solar Farm is located within and would therefore directly impact a small part Landscape

Character Area (**LCA**): 9 Hirwaun Common and Surrounding Ridges. However, the key characteristics of this LCA would not be substantially affected by the development with existing vegetation largely retained, managed and enhanced as far as possible. There would be some removal of existing vegetation but this would be limited to that required for site access and internal access routes. The LCA is not covered by any National or local landscape designations but due to its rural location, albeit at the edge of a settlement, is sensitive to this form of development.

The LVIA summarises the landscape and visual effects of the Solar Farm suggesting that it would introduce a relatively small-scale solar renewable energy development within an area of open grassland that is irregular in shape. It is bounded by woodland to the north, east and south, with local roads to the north (Cefn Carfan Road), west (A4061 Blackmill Road) and the B4280 Pant Hirwaun to the south. There are a number of other local roads, within Bryncethin, that are close to the site.

The Solar Farm element would be sited on sloping ground and as such is visible within views from the surrounding area to varying degrees, but particularly from areas to the south. There is existing electrical infrastructure within the local landscape in the way of large electricity pylons and overhead cables, with some longer distance views to wind turbines. The LVIA notes other solar parks at some distance from the Application site but not within the local vicinity. As such, the proposed development would introduce new built elements of renewable energy infrastructure into this partly contained location. Given its containment, the temporary nature of the Solar Farm and its close proximity to the existing urban area of Bryncethin, the LVIA indicates that the potential effects upon the character of the local, district and the national landscape as a result of the development would be not significant.

With respect to effects upon views, a low-lying development of this type, particularly the Solar Farm, would cause some localised obstruction to near distance views. Of the visual receptors and Representative Viewpoints included in the LVIA, the development would give rise to a significance of effect upon views of no greater than '*Minor adverse'* at the commencement of development. Those effects would be unchanged even with the establishment of new planting and management of existing vegetation. Over time, the visual effects would diminish, but it would remain visible and would therefore result in some residual and local adverse effects. These effects would not however be significant.

Overall, the quality and character of the landscape and visual amenities of the area would be largely maintained for the lifetime of the development. Furthermore, it is considered that the local landscape has the capacity to accommodate the development without significant landscape and/or visual effects.

Whilst the LVIA provides a comprehensive appraisal of the wider impacts on landscape character and visual amenities, it does not examine in detail visual amenity as a component of the amenities currently enjoyed by existing residents.

The Solar Farm will be located on land to the east of Blackmill Road with the Application boundary adjoining no's 32-40 Blackmill Road, the Bryncethin Depot and no's 5-11 Dennis Place. Based on the submitted layout plan which has been overlaid on an OS Base Map, distances ranging from 126m and 112m will separate the solar panels from the nearest properties, (44 Blackmill Road and 6 Dennis Place respectively). Given the distances, and the panels being at right angle to the view, (not directly facing) and the intervening boundary treatments, the impact of the panels and the development on the visual outlook and amenities of the residents should not be significant. The retained planting and new landscaping should also minimise the impact.

The property known as 'Nant y Mynydd' on the B4280 lies to the south of the Solar Farm,

approximately 190m from the nearest panel. The view from this property would be directly facing the panels which would potentially have a greater impact. Landscaping features around the property should however obscure many of the views although additional landscaping could be provided to minimise the effects of the development.

The effect of the Hydrogen Production Facility and Solar Farm on landscape character and visual amenity has been comprehensively assessed through the planning submission. Where impacts have been identified they are generally not considered to be adverse. This is however based on the development seeking to minimise tree loss, protect those trees that are to be retained and deliver new planting that will enhance existing and minimise the impact of the development of the respective site in the medium to long term. The impact of the 8m high wall around the Hydrogen Production Facility and the development more generally is not significant and will diminish over time with the retention of trees and new planting.

Overall, the visual impacts of the respective development are acceptable and meet the requirements of both National and local (LDP) policy can be met by this development in this respect.

Whether the proposed development will result in any significant loss of habitats or populations of species and whether the scheme will provide a net benefit for biodiversity.

Hydrogen Production Facility & Solar Voltaic Electricity Generating Station (Solar Farm)
In assessing a planning application, the Local Planning Authority must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions, under the Environment (Wales) Act 2016.

Planning Policy Wales 12 (**PPW12**) states in Paragraph 6.4.4: "*It is important that biodiversity and resilience considerations are taken into account at an early stage in both development plan preparation and when proposing or considering development proposals.*" PPW12 further states that " *All reasonable steps must be taken to maintain and enhance biodiversity and promote the resilience of ecosystems and these should be balanced with the wider economic and social needs of business and local communities. Where adverse effects on the environment cannot be avoided or mitigated, it will be necessary to refuse planning permission*."

Technical Advice Note 5: Nature Conservation and Planning states that: "*Biodiversity, conservation and enhancement is an integral part of planning for sustainable development. The planning system has an important part to play in nature conservation. The use and development of land can pose threats to the conservation of natural features and wildlife*."

Policy SP3 of the adopted Local Development Plan (2024) requires development to Safeguard and enhance biodiversity and integrated multi-functional green infrastructure networks.

Policy DNP6 of the LDP states: "*All development proposals must provide a net benefit for biodiversity and improved ecosystem resilience, as demonstrated through planning application submissions. Features and elements of biodiversity or green infrastructure value should be retained on site, and enhanced or created wherever possible, by adopting best practice site design and green infrastructure principles. Development proposals must maintain, protect and enhance biodiversity and ecological networks / services. Particular importance must be given to maintaining and enhancing the connectivity of ecological networks which enable the dispersal and functioning of protected and priority species*"

Policy DNP7 of the LDP states: "*development that would adversely affect trees woodlands and hedgerows of public amenity or natural/cultural heritage value or provide important ecosystem will not be permitted*". Policy DNP8 of the LDP requires new development proposals to integrate, protect and maintain existing green infrastructure assets and to enhance the extent, quality, connectivity and multi functionality of the green infrastructure network.

Paragraph 5.9.20 of Planning Policy Wales (PPW) states planning authorities should identify ways to avoid, mitigate or compensate adverse impacts of renewable and low carbon energy development, considering the impact on the natural and historic environment.

Residents have suggested that the ecology reports have referred to the wrong piece of land and have not properly assessed the impact on bats, birds of prey and reptiles which are found on the development sites. Further, that, appropriate and documented environmental surveys should be made prior to this Application being considered for planning and that any loss of habitat would be unacceptable and contrary to National Policy.

The Ecological Impact Assessment (**EcIA**) submitted with the Application in November 2023, sets out the baseline ecological conditions within and adjoining the proposed development areas including the temporary working areas. The EcIA report assesses the impacts associated with the construction and operation of the proposed development on biodiversity and nature conservation and details the measures that will be required to prevent, or reduce effects, or to provide beneficial enhancement.

From the Extended Phase 1 Habitat Survey that was undertaken in September 2022 and Phase 2 Botanical Survey completed in June 2023, some habitat types assigned in the original EcIA assessment were reclassified based on the additional information obtained on the botanical composition. Areas of habitat and other features of interest considered suitable for protected species or those of conservation interest, such as refuges and ponds, were recorded. A preliminary search was made of suitable habitat for evidence of use by protected species.

In response to comments received from Natural Resources Wales, the following additional Phase 2 species surveys were undertaken in the Spring, Summer and Autumn of 2023: Badger Survey; Otter survey; Breeding Bird survey; Great Crested Newt surveys; Reptile Survey; Bat Activity Survey; Bat Preliminary Roost surveys and Emergence Surveys; Dormouse Survey; Invertebrate Survey.

Section 4 of the EcIA includes a detailed impact assessment of the construction and operational effects of the development on the respective sites on statutory designated sites, non-statutory designated site, (Tyn Y Coed SINC) habitats and fauna. From the assessment of impacts, detailed mitigation and enhancement measures have been set out in the EcIA document. A summary of the effects on habitats and species is summarised in **Appendix A** to this report. The net benefit for biodiversity which is a requirement of National and local policy is detailed as follows:

- The design of both the proposed Hydrogen Production Facility and proposed Solar Farm retains higher value habitat within the site and maintains habitat connectivity.

- There are no residual effects of significance on faunal species.

- Although the proposed Hydrogen Production Facility will necessitate habitat loss this will be low value grassland of recent origin with a high proportion of Himalayan Balsam and lower value woodland. The landscape scheme has been designed to create habitats with

biodiversity value and enhance retained habitats.

- The Solar Farm development will require minimal habitat loss and this has been confined to lower value areas of the site. Most of the onsite habitats will be retained and sensitively managed to ensure the overall proposed development provides a net benefit for biodiversity.

Natural Resources Wales (NRW) have provided a series of responses to a number of consultations following the submission of the ecological reports and species surveys. The following is a summary of the responses received from NRW:

- We note the recommendations proposed in the Vegetation Survey report and advise that any recommendations to manage vegetation should be done in full consultation with recommendations set out in protected species survey reports. We note this indicates that the 5 rows of solar panels in the North-West corner of the site will be impacting on an area of Semi-improved acid grassland / rush mosaic that has upright Chickweed present which as stated on page 30 is a 'Primary Species' in the Wildlife Sites Guidelines and is considered important in a county context.
- Due to the sites proximity to Blackmill Woodland SAC and SSSI (1km) and Cefn Cribwr SAC (4km) we advise you as the competent authority to carry out the test of Likely Significant Effects for the proposed development. That test has been undertaken.
- The proposals show that there is a low likelihood of disturbance of otters, either through the construction or operational phase, and that mitigation is included within Section 5.2 of the EcIA (Mitigation and Enhancement – Species Protection) as a precautionary measure. This includes a site walkover survey by a suitably experienced ecologist prior to the start of construction works at the west of the solar farm. We support this proposal but would advise that the scope of this walkover survey should be extended to include the dense scrub that is to be removed on the eastern bank of the river Ogmore. We are satisfied that the details of this survey can be covered sufficiently within the Construction Environment Management Plan (CEMP).
- The EcIA summarises that, following bat preliminary roost assessments and subsequent activity surveys, bat roosts will not be affected by tree felling or thinning across the site, and foraging/commuting bats will not be significantly affected by light spill at the proposed hydrogen facility. We support both these observations and the proposed mitigation designed to minimise any impacts to bats. We are satisfied that the lighting proposals, summarised in drawing BSB14513-RPS-XX-XX-DR-E-6301, are sufficient to support the retention of bat roosting and foraging in the woodland to the north of the hydrogen plant. We note that the woodland to the south of the site, which was noted to be used by low and infrequent numbers of light-sensitive bat species, might be affected by the proposals, but that the effects will not be significant. We support this observation. The mitigation proposals set out in Sections 5.2.4 to 5.2.7 of the EcIA are satisfactory and should be included within the CEMP.
- We note from the Great Crested Newt Report that a Habitat Suitability Index (HIS) survey of waterbodies identified within a 500m buffer of the development site, and subsequent eDNA testing of 5 ponds, summarised that great crested newts were likely absent from the site. We have no further comments to make on this species.
- A habitat assessments and nest tube surveys were undertaken in line with best practice guidelines, and the results summarised that dormice are unlikely to be present across the site. We have no further comments to make on this species.
- NRW consider that the mitigation measures outlined in Section 5.2 of the EcIA for otters and bats are sufficiently protective of these ecological receptors; further details of these should be included in an updated CEMP. Conditions should also be imposed to ensure that the recommendations in the relevant ecological reports are implemented as part of the development.

It should be noted that in response to the comments from NRW and on the recommendation of the Applicant's consultant ecologist, 5 rows of solar panels in the North-West corner of the site have been removed. An area of Semi-improved acid grassland / rush mosaic that has upright Chickweed present will no longer be affected by the development.

Overall, the Application will ensure that any potential adverse impacts on ecology are mitigated, and the existing biodiversity interests enhanced, providing biodiversity net gain. Both sites that make up the development have been designed taking into account Ecosystem Resilience relating to diversity, extent, connectivity, context and adaptability outlined in Planning Policy Wales 12 (**PPW12**). Habitats with higher species diversity will be maintained. Opportunities have been taken to create new habitats by promoting the use of native species, including connecting and enhancing habitats such as hedgerows, tree planting and areas set aside for biodiversity. The proposed development will retain higher value habitats and areas with higher species diversity. Where habitat loss is unavoidable, the extent of the loss has been minimised.

Monitoring of the site which can be secured through a planning consent will inform future management to ensure the biodiversity value of the site is maintained. The development meets the policy tests in this regard.

The impact of the development on local utility supply, (water and electricity) and the effect of the development on the existing drainage systems and whether a sustainable drainage systems can be incorporated into development to enable the management of surface water

Hydrogen Production Facility & Solar Voltaic Electricity Generating Station(Solar Farm)

Water Supply

Both National and local policy refer to the importance of grid connections and it is well established in planning policy that the planning system has an important part to play in ensuring that the infrastructure on which communities and businesses depend is adequate to accommodate proposed development. The adequacy of water supply and sewerage infrastructure should be fully considered when proposing development, both as a water service and because of the consequential environmental and amenity impacts associated with a lack of capacity.

Residents and businesses have expressed concerns about the Hydrogen Production Facility affecting local water supply. Documents submitted with the Application indicate that mains water will feed the operations with a peak operational rate of 2.3 cubic metres per hour. Objectors have cited the comments offered by Dwr Cymru Welsh Water as part of the pre-application consultation.

In response to the planning Application, Dwr Cymru have provided the following comments on water supply:

'We anticipate this development will require the installation of a new single water connection to serve the new premises. Capacity is available in the water supply system to accommodate the development. The applicant will need to apply to Dwr Cymru Welsh Water for a connection to the potable water supply system under Section 45 of the Water industry Act 1991.'

Based on this response, the concerns originally expressed by Dwr Cymru Welsh Water have been addressed.

Electricity

In terms of electricity supply, no adverse comments have been received as part of the pre-application and Application consultations. The development company would have to apply to make the necessary connections and it may be necessary for upgrades to be made but this would be regulated outside the planning process.

Drainage

The proposed drainage strategies for the respective sites have been detailed in a document which has accompanied the Application and is summarised in **Appendix A** to this report.

The drainage strategy for the Hydrogen Production Facility will accommodate surface runoff which will be conveyed to an attenuation pond via a site surface drainage system. Due to the lack of watercourses nearby and the no-permeability of the site, the hydrogen site surface water drainage is proposed to discharge into existing Welsh Water storm drain manhole, located at the southern end of Squire Drive. This will be subject to the agreement of Dwr Cymru Welsh Water.

The drainage strategy for the Solar Farm site includes permanent works associated with the Solar PV Site and temporary works for the construction phase. Drainage strategy will accommodate surface runoff which will be conveyed to an attenuation pond via a site surface drainage system. The pond, which will be located to the rear of properties on Dennis Place, will discharge to the nearest watercourse at limited flow rate. Constructing a new outfall to the river would require consent from the Local Drainage Authority.

The Council's Land Drainage Team note that infiltration drainage is unlikely to work on either development sites. Watercourses are located within the Bryncethin site and it is recommended that 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 such works. The use of green SuDs would maximise the full biodiversity benefits of this development.

There is a public surface water sewer located within the highway adjacent to the Brynmenyn development but the Applicant will need to contact DCWW to discuss the proposed connection to the public sewer. DCWW have confirmed that capacity exists within the public sewerage network in order to receive the domestic foul only flows. It is understood that the foul connection will only serve the proposed amenity block.

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. The Applicant will need to provide a Construction Environmental Management Plan (**CEMP**) outlining how surface water runoff and sediment/pollution prevention control measures will be managed on site during the construction phase.

Given both the sites at Bryncethin and Brynmenyn are each more than 100 m2 both sites will require SAB approval. Pre-SAB applications have been received for the proposed Hydrogen Production Facility and Solar Farm. Maintenance of the sustainable drainage features will remain with the Applicant as landowner.

Natural Resources Wales in their consultation responses have requested that conditions regarding land contamination and controlled waters and pollution prevention should be attached to any planning permission granted. It should be noted that Flood Consequences

Assessments have been submitted with the Application in connection with the development but in particular the hydrogen pipeline. NRW indicated that bridging the pipeline over the river was unlikely to be acceptable and formally objected to the Application. That pipeline element of the Application has been omitted.

Overall, no objections have been offered from the drainage bodies to the development. Pre-commencement conditions will be imposed requiring the agreement of drainage scheme for the respective sites. It should be noted that SuDS drainage scheme for the Hydrogen Facility has recently been granted by the Sustainable Drainage Approval Body (SAB) for Bridgend County Council.

Whether the ground conditions can support the development and whether the mitigation required is achievable through the grant of planning permission

Hydrogen Production Facility

The planning system should guide development to reduce the risk from natural or human-made hazards affecting the land surface or sub-surface. The aim however is not to prevent the development of such land. Key is understanding the risks associated with the previous land use, pollution, groundwater, subsidence, mine and landfill gas emissions and rising groundwater from abandoned mines. Responsibility for determining the extent and effects of surface and subsurface hazards remains with the developer. It is for the developer to ensure that the land is suitable for the development proposed.

Residents have referred to old mine workings and geological faults in the vicinity of the sites and the high risks associated with the storage of hydrogen on unstable ground.

Ground Investigation Reports and a Coal Mining Risk Assessment have been prepared for the respective sites. A summary of the key issues from the respective reports is included in the Technical Summary Report **(Appendix A).**

The submitted reports include detailed preliminary contamination and mine gas assessments based on desk studies and site walkovers. They confirm the need for site investigation works including gas monitoring to determine the nature and extent of ground contamination and gas emissions and the 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. These matters can be secured by the imposition of conditions.

NRW have reviewed the submitted reports from the perspective of any land contamination affecting controlled waters. The reports have identified low levels of contamination across the site, which has been assessed as low risk to controlled waters. NRW did note that grouting to stabilize historic mine workings may be required as part of remediation scheme and that can also affect ground water. The Applicant's agent has confirmed that coal seam grouting will not be required.

The Coal Authority confirm that the proposed Hydrogen Production Facility is not within the defined Development High Risk Area and is away from the location of the coal seam outcrops. Site investigations will be necessary to confirm a suitable thickness of bedrock and/or depth to shallow mine workings. The depth of ground investigation works will be partially dependent upon the final foundation depth. Should evidence of mineworks be encountered stabilisation treatment would be required prior to development.

Solar Voltaic Electricity Generating Station (Solar Farm)

The Solar Farm site has been subject to historic recorded underground coal mining at shallow depth. Records also indicate the presence of seven recorded mine entries (shafts and adits) near the site. Thick coal seams also outcrop across the site, which may have been worked from the surface. Voids and broken ground associated with such workings can pose a risk of ground instability and may give rise to the emission of mine gases. An untreated mine entry and its resultant zone of influence pose a significant risk not only to surface stability but also public safety.

The Coal Authority note the Applicant company's commitment to investigate and remediate (where deemed proportionate), certain coal mining legacy features within the site. Whilst the solar array (Solar Farm) and road infrastructure do not appear to have been designed around the mine entries, these aspects of the proposals meet with the Coal Authority's exemption criteria and such mitigation is not required.

Evidence has been key to understanding the impact that existing ground conditions have on the development but, based on the technical reports and responses received from the Council's Land Environment Team, The Coal Authority and Natural Resources Wales, there is no indication that the impact of the existing ground conditions on the development poses a risk to safety. Further investigations works would be required before any development commences but these would be secured through pre-commencement planning conditions.

Whether the development would have any impact on any archaeological remains.

The planning system recognises the need to conserve archaeological remains. The conservation of archaeological remains and their settings is a material consideration in determining planning applications, whether those remains are a Scheduled Monument or not.

"***Heneb***" (formerly known as 'Glamorgan Gwent Archaeological Trust') in their consultation confirmed that the impact of the development on the archaeological resource would be a material consideration and requested that determination of the planning Application be deferred.

The information in the Historic Environment Record (**HER**) curated by Heneb indicates that the proposal (Solar Farm) is located in an area of archaeological potential. It is within an important Industrial extractive landscape, with historic mapping depicting collieries, shafts, clay pits, associated brick works, tramroads, air shafts, tips, reservoir etc. As such there is the potential for archaeologically significant remains to be encountered during the course of the development proposal. Accordingly, an archaeological desk-based assessment was requested.

A Cultural Heritage Desk-based Assessment submitted by the applicant in February 2024 determined that the archaeological potential is focussed on the southern section of the Solar Farm site and specifically relates to the remains of late 19th century/early 20th mining activity. However, this Assessment also notes that '*much of this part of the study site was subject to clay extraction and had waste material from the brickworks and the mine deposited on it. Later remediation has levelled much of the study site here*.' Such levelling of deposits was encountered during the ground investigation works (Mott Macdonald, July 2023). A 19th century brickworks was also present on the site, although it is located on the site of the Council's Depot and will not be affected by the proposed works. It should also be noted that the proposed cable runs are located adjacent to existing roads and tracks, the construction of which is likely to have had adverse effect on any potential remains that may be present.

Overall, it is still unlikely that significant archaeological remains will be encountered during any requisite groundworks. There is unlikely to be an archaeological constraint to this proposed development. The requirements of local and national policy have been addressed.

Private Wire Line

As indicated in the introduction to this report, electrical power to the Hydrogen Production Facility will be from the grid and the proposed Solar Farm via an underground wire private wire, the route of which is illustrated in Figure 6 on page 6 of this report. It will follow existing footways and verges and will cross sections of the public highway. The works would need to be undertaken through a licence granted under the Highways Act and with the landowner's permission which in this case would be the Council.

Some comment has been provided regarding the position of the route of the private wire by residents although its impact on the environment should be limited. It should be noted that the Highway Network Manager of the Council does not generally support the use of the public highway for the installation of apparatus to serve private companies and there is a risk to the developer that the private wire line may not be permitted. This is a decision that would be take outside of the planning process and there is a possibility that an alternative route will be required. If the Council were minded to approve the scheme, a condition would be imposed that required the construction of the wire line connecting the respective sites no later than 6 months from the production of hydrogen commencing. This is to ensure the production of green hydrogen in accordance with the requirements of National and local planning policy.

CONCLUSION

Development management is the positive and proactive approach to shaping, considering, determining and delivering development proposals through the process of deciding planning Applications. Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that if regard is to be had to the Development Plan for the purposes of any determination to be made under the Planning Acts, the determination must be made in accordance with the Plan unless material considerations indicate otherwise. Factors to be considered in making planning decisions (material considerations) must be planning matters, that is, they must be relevant to the regulation of the development and use of land in the public interest, towards the goal of sustainability.

Preceding sections of this report outline the significant in-principle policy support for developing renewable and low carbon energy from all technologies and at all scales to meet our future energy needs. This is reflected in both National and Local Development Plan Policy, including 'Future Wales'. Indeed, Future Wales states that, when determining planning applications for low carbon energy and renewable energy developments decision-makers must give significant weight to the need to meet Wales' international commitments and the Welsh Government's target to generate 70% of consumed electricity by renewable means by 2030, in order to combat the climate emergency. Green hydrogen will assist both the UK and the Welsh Government in the achievement of power system decarbonisation targets and this project would make a meaningful contribution. Low carbon energy generation proposals which are designed to serve clusters, such as district heating systems are also supported albeit this is no longer part of the Application with the omission of the hydrogen pipeline. Nevertheless, there is still in principle support for the scheme which is proposed on land that is allocated for industrial development. Whilst development in the countryside must be carefully controlled, it can be an appropriate location for a renewable energy project as a standalone development or to facilitate the production of green hydrogen as proposed.

Where Policies may support the principle of developing the respective sites it is not absolute and the development must still accord with all aspects of policy both at a National and Local Plan level that are relevant to the details of the scheme. Weight must also be afforded to the significant level of public objection, particularly where the concerns raised align with the key planning considerations, such as impact on local infrastructure (roads and drainage), the living conditions of residents, (noise, pollution, lighting, safety and outlook) the operation of businesses and the impact on the site's biodiversity interests.

Following a comprehensive review of the evidence submitted and responses received from the statutory consultees, it has been concluded that the infrastructure can accommodate the proposed development. The construction and operational traffic generated albeit onto an already busy network will not be detrimental to highway safety. Furthermore, the proposed access onto Squire Drive is considered acceptable subject to the agreement of the engineering details for the proposed highway works. The agreed design will have regard to the existing access arrangements serving the adjoining businesses and all users of the public highway.

The impacts of the development on visual amenities principally the views of the site from properties to the south, east and users of the adjoining A4065 are not considered to be adverse but key to this will be the retention of trees on the boundaries of the Hydrogen Production Facility. Planning conditions will not only seek to retain the trees but also agree a program for their long-term management, including the areas of new planting.

Impacts on local landscape character are particularly relevant to the Solar Farm site of the project. Whilst a small part of the Hirwaun Common and Surrounding Ridges Landscape Character Area would be affected, this is minimised through the retention, management and enhancement of existing vegetation. The effects upon views have been considered and whilst there will be some localised obstruction to near distance views, these would not be significant. Overall, the quality and character of the landscape and visual amenities of the area would be maintained for the lifetime of the development. Furthermore, it is considered that the local landscape has the capacity to accommodate the development without significant landscape and/or visual effects.

In deciding a planning application, the Local Planning Authority must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions, under the Environment (Wales) Act 2016. Local Policies require all applications to demonstrate a net benefit for biodiversity and improved ecosystem resilience.

Extensive survey work has been undertaken in accordance with the requirements of Natural Resources Wales across both development sites and it has been demonstrated that any potential adverse impacts on ecology are mitigated with existing biodiversity interests enhanced, thus providing biodiversity net gain. Where habitat loss is unavoidable, the extent of the loss has been minimised. Habitats with higher species diversity will be maintained and opportunities have been taken to create new habitats by promoting the use of native species, including connecting and enhancing habitats such as hedgerows, tree planting and areas set aside for biodiversity. Monitoring of the sites which can be secured through a planning consent will inform future management to ensure the biodiversity value of the sites are maintained. The development meets the policy tests in this regard

The impacts of the development on the living conditions of existing residents in the communities of Bryncethin and Brynmenyn have been carefully considered in accordance with Policy SP13 of the LDP which confirms that such projects will only be permissible where it can be demonstrated there will be no unacceptable impacts on local communities (such as noise and air pollution). A series of technical reports have been submitted in support of

the Application in respect of noise, air quality and lighting and these have been examined by the appropriate officers.

Through changes to the layout and on-site mitigation (8m high wall), noise from the Hydrogen Production Facility should not have an adverse impact on the living conditions of the nearest residents on Davis Avenue, Rowans Lane and Ffordd Leyshon. Through conditions, noise rating and sound power levels will be set, mitigations measures will be implemented and further noise surveys and possibly additional mitigation will be required following the commissioning of the development and in the event of receipt of complaints from residents in the future.

The development of the Solar Voltaic Electricity Generating Station (Solar Farm) will introduce new noise sources but the predicted noise level rating from the Solar Farm, following the selection of quieter equipment and re-design of the site, is well within acceptable limits and there should be no effect on the living conditions of the nearest residents.

The submitted Air Quality Assessment has considered impacts from both the construction and operational phases of the development and concluded that there will be no risk to local air quality in relation to harmful emissions. Whilst the development may change the number, type and of vehicles using the local road network, there will be negligible impact on local air quality during the operational phase of the development for all pollutants.

Construction phase dust impacts have also been assessed by the Applicant and mitigation measures recommended.

Based on the technical evidence, the proposed Hydrogen Production Facility will not have an adverse impact on air quality during operation and, subject to conditions, the impacts during the construction phase can be managed.

Pollution through lighting will be the subject of further examination as part of a review of the final lighting scheme but, on the basis all lighting will be inward facing, the light spillage beyond the site will be limited.

Public safety has been of significant concern to the residents and businesses close to the proposed Hydrogen Production Facility. Although not referenced within the National and Local Plan policy framework, Welsh Government Guidance does indicate that the effects of a development on health and public safety are possible material considerations. It is evident that the regulatory framework controlling the operation of a hydrogen production facility is extensive and that is set out in this report. Where a regulatory regime exists to deal with an issue raised by a planning application, it is open to a Local Planning Authority to place reliance upon the effective operation of that regime in determining an application for planning permission. The Local Planning Authority cannot simply ignore the issues and has not done so in the processing of the Application but, based on the evidence and responses received as part of the consultation process, the other regulatory regimes can control the development in the interests of public safety. The grant of planning permission does not however remove the need to obtain any other consents nor does it imply that such consents will be forthcoming. Notwithstanding the significant level of objection, this does not represent a reason for refusing planning permission.

Other matters of detail such as site drainage and ground conditions have been dealt with in an acceptable manner in the Application submission and no objections have been received from statutory consultees. However, a list of conditions will be imposed in the interests of safety and to protect the environment in accordance with the request of the respondents. The necessary mitigation is achievable through the grant of planning permission.

All material considerations have been taken into account during the determination of this Planning Application including the representations and concerns raised by the residents and business owners. As demonstrated above, non land use planning matters pertaining to safety and other forms of regulation are considered through separate legislation and if planning permission is granted it does not negate the need for other consents and licences for the development to operate. In this Application, and in view of the above detailed Appraisal, it is considered that the concerns raised do not outweigh the land use planning merits of the proposal and, on balance, the development is considered acceptable in land use planning terms and so the recommendation is that planning permission be granted subject to conditions.

RECOMMENDATION: If the Direction issued under Article 18 of the Town and Country Planning (Development Management Procedure) (Wales) Order 2012 that prevents the grant of planning permission is removed by Welsh Government, that permission be **GRANTED** subject to the following conditions: -

1.	The development shall begin not later than five years from the date of this decision. Reason: To conform with the requirements of Section 91 of the Town and Country Planning Act 1990.
2.	Subject to the requirements of other conditions attached to this permission the development shall be carried out in accordance with the following list of approved plans and in accordance with the recommendations and measures contained within the following approved supporting documents: • PL100 Proposed Site Layout (Wider Scale) 1454_PL100 Revision A • PL101 Proposed Site Layout 1454_PL101 Revision B • PL110 Admin & DNO Switchroom - Ground Floor & Roof Plan 1454_PL110 Revision A • PL111 HV & LV Substation - Ground Floor & Roof Plan 1454_PL111 Revision A • PL200 Existing Site Sections A-A & B-B 1454_PL200 Revision A • PL201 Proposed Site Sections A-A & B-B 1454_PL201 Revision B • PL300 Proposed Site Elevations N & E 1454_PL300 Revision A • PL301 Proposed Site Elevations S,W & W with Substation Omitted 1454_PL301 Revision A • PL302 Proposed Site Elevations X & Y 1454_PL302 Revision A • PL303 Proposed Site Elevation Z from A4065 1454_PL303 Revision A • PL304 Proposed Site Elevations X & Y - Foliage Year 1 1454_PL304 • PL305 Proposed Site Elevation Z from A4065 - Foliage Year 1 1454_PL305 • PL306 Proposed Site Elevations X & Y - Foliage Year 5 1454_PL306 • PL307 Proposed Site Elevation Z from A4065 - Foliage Year 5 1454_PL307 • PL308 Proposed Site Elevations X & Y - Foliage Year 15 1454_PL308 • PL309 Proposed Site Elevation Z from A4065 - Foliage Year 15 1454_PL309 • PL400 Admin & DNO Switchroom Elevations & Sections 1454_PL400 Revision A • PL401 NEL Electrolyser & Rectifier Elevations & Roof Plan 1454_PL401 Revision A • PL403 Metering Container Elevations & Roof Plan 1454_PL403 Revision A • PL404 MP Hydrogen Storage Elevations & Roof Plan 1454_PL404 Revision A • PL406 MP1000 Compressor Elevations & Roof Plan 1454_PL406 Revision A • PL407 Canopy & Pump Elevations & Plans 1454_PL407 Revision A

- PL408 Fire Water Tank Elevations & Roof Plan 1454_PL408 Revision A
- PL409 Pump House Elevations & Roof Plan 1454_PL409 Revision A
- PL412 Nitrogen Cylinder & Air Compressor Elevations & Roof Plan 1454_PL412 Revision A
- PL413 HV & LV Substation Elevations & Sections 1454_PL413 Revision A
- PL414 Reciprocating Compressor Elevations & Roof Plan 1454_PL414

- IL001 Proposed Fencing Layout 1454_IL001 Revision A
- IL002 Lighting Design 1454_IL101
- IL003 Fencing Details 1454_IL003 Revision A
- IL004 Materials & Colours 1454 IL004

- Drawing 108939-MMD-BRGR-XX-DR-E-0094 – Revision P01 - General Inverter Indicative Cross-Section
- Drawing 108939-MMD-BRGR-XX-DR-E-0091 – Revision P02 - General PV layout Cross-Sections
- Drawing 108939-MMD-BRGR-XX-DR-E-0095 – Revision P01 – Transformer and Switchgear– Indicative Elevation and Cross-Section
- Drawing 108939-MMD-BRGR-XX-DR-E-0096 – Revision P01 – Control Building, Switchgear Building, & Storage – Indicative Elevation and Cross-Section
- Drawing 108939-MMD-BRGR-XX-DR-E-0097 – Revision P01 – CCTV – Indicative Elevation and Cross-Section
- Drawing 108939-MMD-BRGR-XX-DR-E-0098 – Revision P01 – Fence – Indicative Elevation and Cross-Section

- Drawing 108939-MMD-BRGR-XX-DR-C-0009 – Revision P02 – Solar PV Drainage Layout
- Drawing 108939-MMD-BRGR-XX-DR-C-0044 – Revision P02 – Hydrogen Production Facilities – Drainage Layout
- Drawing 108939-MMD-BRGR-XX-DR-C-0046 – Revision P01 – Hydrogen Production Facilities - Earthworks

- Private Wire Route – Drawing: 0515-2022-CHA

- Drawing JSL4535_100 Rev D Landscape Strategy dated 22/03/2024 by RPS Group
- Drawing JSL4535_101 Rev D Landscape Strategy dated 28/03/2023 by RPS Group
- Tree Constraints Plans (1 to 7) – RPS Drawings 700, 701, 702, 703, 704, 705, 706.
- Tree Protection/Removal Plans (1 to 7) – RPS Drawings; 710, 711, 712, 713, 714, 715, 716.

- Green Infrastructure Statement by RPS – February 2024
- Preliminary Ecology Appraisal by RPS – November 2022
- Ecological Impact Assessment by RPS – November 2023
- Tree Survey Schedule – Proposed Tree Removals – Revision A received on 12th August 2024
- Grassland Fungi Survey by Sturgess Ecology – November 2023
- Tree Ground Inspection for Bat Roost Potential by RPS – May 2023
- Reptile Report by RPS – September 2023
- Invertebrate Surveys by DJ Gibbs – October 2023
- Breeding Bird Survey Report by RPS – September 2023

	• Otter Report by RPS – October 2023 • Vegetation Survey – Land at Bryncethin by Sturgess Ecology for RPS – June 2023 • Construction Environmental Management Plan by RPS – August 2024 • External Lighting – Bridgend HPF, Version P02 by RPS - November 2023 • Bryncethin Solar Farm – Ground Investigation Report by Mott MacDonald – July 2023 • Brynmenyn Hydrogen Plant - Ground Investigation Report by Mott MacDonald – June 2023 • Bryncethin Solar Farm – Phase 1 Desk Study by Mott McDonald – July 2022 • Brynmenyn Hydrogen Plant – Phase 1 Desk Study by Mott McDonald – July 2022 • Preliminary Coal Mining Risk Assessment by RPS – September 2022 • Bridgend Green Hydrogen Scheme - Solar Farm – Noise Impact Assessment by RPS – July 2024 • Bridgend Green Hydrogen Scheme - Noise Assessment – Technical Note Date 08 July 2024 • Air Quality Assessment – Green Hydrogen Project - Revision 2 by RPS – March 2023 (Mitigations in Chapter 7) • Utilities and Emissions Summary – Revision B • Hydrogen Production Facility - Proposed Drainage Strategy by Mott MacDonald – November 2022. Reason: To ensure that the development is carried out in accordance with the approved documents, plans and drawings submitted with the application.
3.	The use of land, buildings and plant hereby permitted on the Brynmenyn site shall be for the production, storage and distribution of hydrogen only and for no other purpose within Classes B2 and B8 of the Schedule to the Town and Country Planning (Use Classes) Order 1987 or in any provision equivalent to those Classes in any Statutory Instrument revoking and/or re-enacting that Order. Reason: To avoid doubt and confusion as to the nature and extent of the approved development and in the interests of highway safety.
4.	The Hydrogen Production Facility hereby approved shall only produce a maximum of 5.2MWH2HHV from 3 electrolysers, (1.7 MWH2HHV per electrolyser). Reason: For the avoidance of doubt as to the extent of the permission granted and in the interest of amenity since the application has only assessed the noise impact of the proposed plant and equipment.
5.	The Bryncethin Solar Farm shall be fully operational and exporting renewable electricity via the private wire line to the hydrogen production facility on Brynmenyn within twelve months of the date of hydrogen being produced on site. Reason: To ensure the production of Green Hydrogen and thereby compliance with local and national policies.

6.	Within 30 years and six months following the date of commencement of the production of hydrogen, or within six months of the cessation of the production of hydrogen, whichever is the sooner, all plant and equipment and all associated structures and fencing hereby approved shall be removed from the site in accordance with a decommissioning and restoration scheme which has first been submitted to and approved in writing by the Local Planning Authority. The decommissioning plan shall include pollution control measures. All existing and new planting implemented as part of the approved scheme shall be retained. The developer shall notify the Local Planning Authority in writing no later than one month following cessation of hydrogen production. The approved restoration scheme shall be implemented in full within 12 months of the cessation of hydrogen production. Reason: To comply with the terms of the application and in the interest of the character and appearance of the area and to allow the land to be used for future employment uses in accordance with the policies of the local plan.
7.	Within 30 years from the date when electricity is first exported, or within one year of the cessation of the generation of electricity from the Solar Farm site in Bryncethin, the solar photovoltaic panels, frames, foundations, and all associated structures and fencing hereby permitted shall have been dismantled and removed from the site and the site restored in accordance with a scheme to be submitted to and approved in writing by the local planning authority. The developer shall notify the local planning authority in writing no later than five working days following the commencement of export of electricity and cessation of power production. Reason: In the interests of visual amenity.
8.	No development shall take place until the following have been submitted to and approved in writing by the Local Planning Authority (LPA) in accordance with the current British Standard 5837:2012 (i) An Arboricultural Method Statement (AMS) detailing the methods to be used to prevent loss of or damage to retained trees within and bounding the site, and existing structural planting or areas designated for new structural planting. The AMS shall include details of site monitoring of tree protection and tree condition by a qualified arboriculturist, undertaken throughout the development and after its completion, to monitor tree condition. This shall include the preparation of a chronological programme for site monitoring and production of site reports, to be sent to the LPA during the different phases of development and demonstrating how the approved tree protection measures have been complied with. (ii) A Tree Protection Plan (TPP) in the form of a scale drawing showing the finalised layout and the tree and landscaping protection methods detailed in the AMS that can be shown graphically. The development shall be carried out in full conformity with the approved AMS and TPP. Reason: To enable the Local Planning Authority to assess the effects of the proposals on existing trees and landscape, the measures for their protection and to monitor compliance.
9.	Notwithstanding the details on the approved plans, no development or site clearance shall take place until there has been submitted to and approved in writing by the Local Planning Authority a scheme of landscaping. The scheme shall include indications of all existing trees (including spread and species) and hedgerows on the land, identify those to be retained and set out measures for their protection

	throughout the course of development. The submitted and approved scheme shall be implemented in full and retained for the lifetime of the development. Reason: In the interest of the character and appearance of the area.
10.	All planting, seeding or turfing comprised in the approved details of landscaping (Condition No.9) shall be carried out in the first planting and seeding seasons following the completion of the development and any trees or plants which within a period of 5 years from the completion of the development die, are removed or become seriously damaged or diseased shall be replaced in the next planting season with others of similar size and species. Reason: In the interest of the character and appearance of the area.
11.	No development shall commence, including any vegetation clearance, until a Biodiversity Management Plan (BMP) has been submitted to and approved in writing by the Local Planning Authority. The BMP shall set out the management and monitoring arrangements for all relevant ecological features, set out detailed new landscaping proposals, enhancement measures proposed and include timescales for implementation. The development shall be carried out in accordance with the approved details. The BMP shall include, but not be limited to, the following: a) Description and evaluation of ecological features, present or to be created on site, to be managed b) Details of the desired condition of features, present and to be created at the site, using attributes with measurable targets to define favourable condition c) Aims and objectives of management d) Ecological trends and constraints on site that might influence management and achieving favourable condition of the retained and new features to be created on site e) Identification of appropriate management options for achieving aims and objectives, including management prescriptions f) Details of the monitoring of habitats, species and conservation enhancement measures. Where the results from monitoring show that conservation aims and objectives of the BMP are not being met, the BMP shall set out how contingencies and/ or remedial action will be identified, agreed and implemented so that the development still delivers the fully functioning biodiversity objectives of the originally agreed scheme g) Details of the body or organisation responsible for implementation of the plan, including management and maintenance responsibilities of the BMP and ensure compliance with all relevant regulatory and other requirements, method statements and plans, and to report to the principal contractor and statutory consultees. h) Preparation of a work scheme detailing the timescale for delivery of the initiatives identified within the BMP, including all species and habitat management and monitoring and habitat aftercare, and a five-year rolling programme with specified timescales for each element i) Details of the periodic review of effectiveness of the BMP, with a written report submitted to the Local Planning Authority every 5 years, and any revisions to the plan to be agreed in writing by the Local Planning Authority prior to implementation. The above shall be provided for the following initiatives: <u>Proposed Hydrogen Production Facility</u> • Wildflower grassland (sown) with native grasses and wildflowers • Grassland in the base of the attenuation basin

	• Management of Retained Mixed semi-natural woodland on the boundaries of the site • New native tree and shrubs <u>Proposed Solar Farm</u> • Grassland beneath solar panels • Grassland outside of perimeter fencing • Grassland in the attenuation basin • New Native trees and shrub planting • Retained and new Broadleaved woodland • Pond • Ditch channels Reason: To maintain and improve the appearance of the area in the interests of visual and residential amenity and to promote nature conservation.
12.	No development shall take place on the Hydrogen Production Facility , including any works of demolition/site clearance, until a Construction Method Statement has been submitted to, and approved in writing by, the Local Planning Authority. The approved Statement shall be adhered to throughout the clearance / construction period. The Statement shall provide for: i. The routeing of HGV construction traffic to/from the site. ii. the parking of vehicles of site operatives and visitors iii. loading and unloading of plant and materials iv. storage of plant and materials used in constructing the development v. wheel washing facilities vi. measures to control the emission of dust and dirt during construction vii. the provision of temporary traffic and pedestrian management along Squire Drive, St Theodore's Way and Chilcott Avenue Reason: In the interests of highway safety.
13.	No development of the Hydrogen Production Facility shall commence until a scheme for the provision of 1 long stay cycle parking stand and 1 short stay cycle parking stand has been submitted to and approved in writing by the Local Planning Authority. The stands shall implemented before the development is brought into beneficial use and retained as such thereafter. Reason: In the interests of promoting sustainable means of travel to / from the site.
14	The proposed staff / visitor parking area at the Hydrogen Production Facility shall be implemented in permanent materials before the development is brought into beneficial use and retained for parking purposes in perpetuity. Reason: In the interests of highway
15	The access to the Hydrogen Production Facility shall be completed in permanent materials at a gradient no steeper than those proposed before the development is brought into beneficial use and retained as such in perpetuity. Reason: In the interests of highway safety.
16	No development shall commence until a scheme for the provision of remodelling the vertical alignment of the Highway of Squire Drive at the site access has been

	submitted to and approved in writing by the Local Planning Authority. The highway shall be amended in permanent materials in accordance with the agreed scheme before the development is brought into beneficial use and retained as such in perpetuity Reason: In the interests of highway safety.
17	The access to the Hydrogen Production Facility shall be laid out with vision splays of 2.4 m x 17m in both directions before the development is brought into beneficial use and retained as such in perpetuity. Reason: In the interests of highway safety.
18	Any entrance gates at the Hydrogen Production Facility shall be set back not less than 20 metres from the nearside edge of carriageway. Reason: In the interests of highway safety.
19	The access to and internal circulatory access arrangements at the Hydrogen Production Facility shall be completed in permanent materials before the development is brought into beneficial use and shall be retained for vehicle turning purposes in perpetuity. Reason: In the interests of highway safety.
20	No development shall take place on the Solar Farm, including any works of demolition/site clearance, until a Construction Method Statement has been submitted to, and approved in writing by, the Local Planning Authority. The approved Statement shall be adhered to throughout the clearance / construction period. The Statement shall provide for: i. The routeing of HGV construction traffic to/from the site ii. the parking of vehicles of site operatives and visitors iii. loading and unloading of plant and materials iv. storage of plant and materials used in constructing the development v. wheel washing facilities vi. measures to control the emission of dust and dirt during construction vii. the provision of temporary traffic and pedestrian management along the site access and Blackmill Road (A4061) Reason: In the interests of highway safety.
21	No development shall commence of the Solar Farm until a scheme for the provision of improved access arrangements adjacent to the entrance to Bryncethin depot has been submitted to and approved in writing by the Local Planning Authority. Such scheme shall consist of revised junction between the access track and the established access to depot including surfacing, radius kerbing and vision splays of 2.4m x 25m to the West 2.4m x 11 to the East. The revised junction shall be implemented in permanent materials for a distance of no less than 15m from the existing depot access prior to commencement of construction and shall be retained as such in perpetuity. Reason: In the interests of highway safety
22	No structure, erection or planting exceeding 0.9 metres in height above adjacent

carriageway level shall be placed within the required vision splay areas at any time.

Reason: In the interests of highway safety

23. The combined noise rating level from all operations and fixed plant and equipment at the development when measured in free field conditions (or where this is not possible a combination of measurement and calculation) in accordance with BS 4142: 2014+A1:2019 (or any British Standard amending or superseding that standard) shall not exceed the noise limits in Table 1 (for the Hydrogen Production Facility) and table 2 (for the Solar Farm, Bryncethin) at any residential premises specified at the locations in Table 1 and Table 2:

Table 1 Hydrogen Production Facility

Noise Sensitive Receptor (NSR)	**Rating Level, dB $L_{Ar,Tr}$ Daytime operations (07.00-23.00 hours)**	**Rating Level, dB $L_{Ar,Tr}$ Night-time operations (23.00-07.00 hours)**
Rowans Lane (any property)	42dB LAeq,1 hour	38dB LAeq,15mins
Davis Ave(any property)	42 dB LAeq,1 hour	40dB LAeq,15mins
Leyshon Way/Ffordd Maendy/ Tyn Y Coed Close	36dB LAeq,1 hour	35dB LAeq,15mins

Table 2- Solar Farm Development Scheme, Bryncethin

Noise Sensitive Receptor (NSR)	**Rating Level, dB $L_{Ar,Tr}$ Daytime operations (07.00-23.00 hours)**	**Rating Level, dB $L_{Ar,Tr}$ Night-time operations (23.00-05.00 hours)**	**Rating Level, dB $L_{Ar,Tr}$ Night-time operations (05.00-07.00 hours)**
Dennis Place (any property)	35dB LAeq,1 hour	29dB LAeq,15mins	35dB LAeq,15mins
Blackmill Road (any property)	30 dB LAeq,1 hour	29dB LAeq,15mins	
Cefn Carfan Isaf	30dB LAeq,1 hour	29dB LAeq,15mins	

Reason: To protect the amenities of the adjoining occupiers.

24. The sound power level of each noise source for the Solar Farm, Bryncethin development shall not exceed the noise levels specified in Table 5.1 of the Technical Noise Report entitled Bryncethin (Solar PV) Noise Report: JAJ03178-REPT-02-R2 (dated 8th July 2024). Prior to installation of the plant and equipment, details shall be submitted to and agreed with the Local Planning Authority to demonstrate compliance with this condition. The plant and equipment shall be implemented as agreed and the mitigation measures shall be maintained for as long as the permitted use continues.

Reason: To protect the amenities of the adjoining occupiers.

25. The sound power level of each noise source for the Hydrogen Production Facility shall not exceed the noise levels specified in Table 3.1 of the Technical Noise Report entitled Brynmenyn (HPF) Noise Report: ENV-ACO-03178-005 (dated 8th July 2024) and mitigation shall comply with table 2.1 of this report. Prior to installation of the plant and equipment, details shall be submitted to and agreed with the Local

	Planning Authority to demonstrate compliance with this condition. The plant, equipment and mitigation shall be implemented as agreed and the mitigation measures shall be maintained for as long as the permitted use continues. Reason: To protect the amenities of the adjoining occupiers.
26.	Prior to the Hydrogen Production Facility being brought into beneficial use, an 8m acoustic wall shall be erected along the north-east and south-east sections of the process area perimeter as shown in light blue in drawing 1454 IL001, Revision A. The wall shall be of solid construction, with no gaps and have a minimum density of 15 kg/m2. Details, including the colour of the wall shall be submitted to and agreed with the Local Planning Authority demonstrating that the minimum mass will be complied with. The wall shall be erected as agreed and retained and maintained for as long as the permitted use continues. Reason: To protect the amenities of the adjoining occupiers.
27.	Prior to the development being brought into beneficial use, at the commissioning stage, a further noise assessment shall be undertaken by a suitably qualified acoustic consultant to demonstrate by measurement or where that is not possible, a combination of measurement and calculation, that the noise rating levels specified in Tables 1 and 2 of condition 23 are being met in practice when assessed in accordance with BS 4142: 2014+A1:2019 (or any British Standard amending or superseding that standard) . The further completed noise assessment shall be submitted to and agreed in writing with the Local Planning Authority within 28 days of the assessment being completed. Where the noise assessment shows that the rating level is not being achieved, it shall include any additional mitigation that is required to meet the rating level in Tables 1 and 2 of condition 23. The mitigation measures shall be carried out in full prior to the development being brought into beneficial use. Reason: To protect the amenities of the adjoining occupiers.
28.	Within 21 days of receipt of a written request from the Local Planning Authority (LPA), following a complaint to the LPA relating to noise emissions arising from the operation of any part of the development site, the site operator shall provide a written protocol for the assessment of the noise levels to the Local Planning Authority for approval. The written protocol shall be produced by an independent acoustic consultant. Within 2 months of the protocol being approved, the noise assessment shall be undertaken in accordance with the agreed protocol and shall be submitted to the Local Planning Authority unless written consent is granted to any variation. The assessment shall include all data collected for the purposes of undertaking the compliance measurements and analysis. The assessment shall propose further noise mitigation measures if there is non- compliance with the noise levels set out in Condition 23. Any additional mitigation required as a result of the above shall be installed on site within 1 month of the date of submission of the report unless otherwise agreed in writing with the Local Planning Authority. Following the installation of the additional mitigation, a further noise assessment using the agreed methodology shall be undertaken and submitted to the LPA to demonstrate that the mitigation has now achieved the noise rating levels specified in condition 23. Reason: To protect the amenities of the adjoining occupiers.
29.	No development on the Hydrogen Production Facility site including site clearance, shall commence until a Construction Environmental Management Plan (CEMP) has

	been submitted to and approved in writing by the Local Planning Authority. The CEMP should include: • General Site Management: details of the construction programme including timetable, details of site clearance; details of site construction drainage, containments areas, appropriately sized buffer zones between storage areas (of spoil, oils, fuels, concrete mixing and washing areas) and any watercourse or surface drain. • Construction methods: details of materials, how waste generated will be managed • Details of equipment to be employed, operations to be carried out, predicted noise and vibration levels at the closest noise sensitive receptors, in accordance with BS5228- (Code of Practice for noise and vibration control on construction and open sites) -and any mitigation measures to reduce the noise where this is indicated to be necessary as a result of the assessment • Approximate timescales of each operational phase • Operational hours • A scheme of vibration monitoring for any operations that are indicated to give rise to vibration undertaken at locations to be agreed with by Shared Regulatory Services • A scheme for implementing effective liaison with the local residents • Measures to control the emission of dust and dirt during the construction, including the prevention of carrying mud onto the road. • Biodiversity Management: details of tree and hedgerow protection; invasive species management; species and habitats protection, avoidance and mitigation measures. • Soil Management: details of topsoil strip, storage and amelioration for re-use. • CEMP Masterplan: details of the extent and phasing of development; location of landscape and environmental resources; design proposals and objectives for integration and mitigation measures. • Resource Management: details of fuel and chemical storage and containment; details of waste generation and its management; details of water consumption, wastewater and energy use. • Pollution Prevention: demonstrate how relevant Guidelines for Pollution Prevention and best practice will be implemented, including details of emergency spill procedures and incident response plan. • Details of the persons and bodies responsible for activities associated with the CEMP and emergency contact details. The CEMP shall be implemented as approved during the site preparation and construction phases of the development. Reason: To ensure necessary management measures are agreed prior to commencement of development or phase of development or specified activity and implemented for the protection of the environment during construction
30	No development on the Solar Farm site including site clearance, shall commence until a Construction Environmental Management Plan (CEMP) has been submitted to and approved in writing by the Local Planning Authority. The CEMP should include: • General Site Management: details of the construction programme including timetable, details of site clearance; details of site construction drainage,

	containments areas, appropriately sized buffer zones between storage areas (of spoil, oils, fuels, concrete mixing and washing areas) and any watercourse or surface drain. • Construction methods: details of materials, how waste generated will be managed • Details of equipment to be employed, operations to be carried out, predicted noise and vibration levels at the closest noise sensitive receptors, in accordance with BS5228- (Code of Practice for noise and vibration control on construction and open sites) -and any mitigation measures to reduce the noise where this is indicated to be necessary as a result of the assessment • Approximate timescales of each operational phase • Operational hours • A scheme of vibration monitoring for any operations that are indicated to give rise to vibration undertaken at locations to be agreed with by Shared Regulatory Services • A scheme for implementing effective liaison with the local residents • Measures to control the emission of dust and dirt during the construction, including the prevention of carrying mud onto the road. • Biodiversity Management: details of tree and hedgerow protection; invasive species management; species and habitats protection, avoidance and mitigation measures. • Soil Management: details of topsoil strip, storage and amelioration for re-use. • CEMP Masterplan: details of the extent and phasing of development; location of landscape and environmental resources; design proposals and objectives for integration and mitigation measures. • Resource Management: details of fuel and chemical storage and containment; details of waste generation and its management; details of water consumption, wastewater and energy use. • Pollution Prevention: demonstrate how relevant Guidelines for Pollution Prevention and best practice will be implemented, including details of emergency spill procedures and incident response plan. • Details of the persons and bodies responsible for activities associated with the CEMP and emergency contact details. The CEMP shall be implemented as approved during the site preparation and construction phases of the development. Reason: To ensure necessary management measures are agreed prior to commencement of development or phase of development or specified activity and implemented for the protection of the environment during construction
31	Prior to the installation of any external lighting, final details of the lighting scheme for the two sites shall be submitted to and agreed in writing by the Local Planning Authority. The schemes shall include the following: • A plan showing the location, height and orientation of the lights, as well as what type of lights are to be erected at what locations • The predicted levels in lux at the closest residential receptors following final choice of design, location and height of lighting columns and information to demonstrate that the levels do not exceed The Institution of Lighting Engineers recommendations in the Guidance Notes for the Reduction of Obtrusive Light' for obtrusive lighting in E2 – Rural areas. • Specify operational hours for each type of lighting and how the lights are activated

	and turn off • Specify any necessary mitigation measures to reduce light spillage beyond the site boundary in particular the retained vegetation to the south and west of the site and to ensure there is no direct glare from any optics into any residential properties (e.g., baffles and screening and specify which lights are to have baffles) and upward light spillage). The lighting schemes shall be implemented as agreed. Reason: To protect the amenities of the adjoining occupiers.
32	Prior to the installation of lighting on the sites, full details of a lighting monitoring scheme shall be submitted to and agreed in writing by the Local Planning Authority. The lighting monitoring schemes shall include: • Measures to monitor light spillage once the development is in operation, • Detail of consistent/accurate method to record light levels in proximity to sensitive features • Details of remedial measures and additional monitoring should light levels not be within the required levels The lighting monitoring schemes shall be implemented as agreed. Reason: To maintain and improve the appearance of the area in the interests of visual and residential amenity and to promote nature conservation.
33	Should the Local Planning Authority make such a request in writing, a post-operation survey shall be undertaken and submitted to the Local Planning Authority within one month of such request being made to demonstrate that the lighting does not exceed the approved specifications. If the survey demonstrates that it does not meet the approved specifications, any remedial action necessary to achieve such approved levels shall be undertaken within one month of such request being made in writing by the Local Planning Authority. Reason: To protect the amenities of the adjoining occupiers.
34	Prior to the commencement of the development an assessment of the nature and extent of contamination shall be submitted to and approved in writing by the Local Planning Authority. This assessment must be carried out by or under the direction of a suitably qualified competent person * in accordance with BS10175 (2011) Code of Practice for the Investigation of Potentially Contaminated Sites and shall assess any contamination on the site, whether or not it originates on the site. The report of the findings shall include: (i) not required (ii) an intrusive investigation to assess the extent, scale and nature of contamination which may be present (iii) an assessment of the potential risks to human health, groundwaters and surface waters adjoining land, property (existing or proposed) including buildings, crops, livestock, pets, woodland and service lines and pipes, ecological systems, archaeological sites and ancient monuments; and (iv) an appraisal of remedial options, and justification for the preferred remedial option(s).

	All work and submissions carried out for the purposes of this condition must be conducted in accordance with the Environment Agency's 'Land contamination: risk management (LCRM)' (October 2020) and the WLGA / WG / NRW guidance document ' Land Contamination: A guide for Developers' (2017) unless the Local Planning Authority agrees to any variation. * A 'suitably qualified competent person' would normally be expected to be a chartered member of an appropriate professional body (such as the Institution of Civil Engineers, Geological Society of London, Royal Institution of Chartered Surveyors, Institution of Environmental Management) and also have relevant experience of investigating contaminated sites. Reason: To ensure that information provided for the assessment of the risks from land contamination to the future users of the land, neighbouring land, controlled waters, property and ecological systems is sufficient to enable a proper assessment.
35	Prior to the commencement of the development a detailed remediation scheme and verification plan to bring the site to a condition suitable for the intended use by removing any unacceptable risks to human health, controlled waters, buildings, other property and the natural and historical environment shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall include all works to be undertaken, proposed remediation objectives and remediation criteria, a timetable of works and site management procedures. The scheme must ensure that the site will not qualify as contaminated land under Part 2A of the Environmental Protection Act 1990 in relation to the intended use of the land after remediation. All work and submissions carried out for the purposes of this condition must be conducted in accordance with the Environment Agency's 'Land contamination: risk management (LCRM)' (October 2020) and the WLGA / WG / NRW guidance document ' Land Contamination: A guide for Developers' (2017) unless the Local Planning Authority agrees to any variation. Reason: To ensure that any unacceptable risks from land contamination to the future users of the land , neighbouring land, controlled waters, property and ecological systems are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors
36	The remediation scheme approved by condition 35 above must be fully undertaken in accordance with its terms. The Local Planning Authority must be given two weeks written notification of commencement of the remediation scheme works. On the completion of the measures identified in the approved remediation scheme and prior to the occupation of any part of the development unless otherwise agreed in writing by the Local Planning Authority, a verification report that demonstrates the effectiveness of the remediation carried out must be submitted to and approved in writing by the Local Planning Authority. All work and submissions carried out for the purposes of this condition must be conducted in accordance with the Environment Agency's 'Land contamination: risk management (LCRM)' (October 2020) and the WLGA / WG / NRW guidance document ' Land Contamination: A guide for Developers' (2017) unless the Local Planning Authority agrees to any variation. Reason : To ensure that any unacceptable risks from land contamination to the future users of the land , neighbouring land, controlled waters, property and ecological

	systems are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors.
37	In the event that contamination is found at any time when carrying out the approved development that was not previously identified it must be reported in writing within 2 days to the Local Planning Authority, all associated works must stop, and no further development shall take place unless otherwise agreed in writing until a scheme to deal with the contamination found has been approved. An investigation and risk assessment must be undertaken and where remediation is necessary a remediation scheme and verification plan must be prepared and submitted to and approved in writing by the Local Planning Authority. Following completion of measures identified in the approved remediation scheme a verification report must be submitted to and approved in writing by the Local Planning Authority. The timescale for the above actions shall be agreed with the Local Planning Authority within 2 weeks of the discovery of any unsuspected contamination. Reason: To ensure that any unacceptable risks from land contamination to the future users of the land , neighbouring land, controlled waters, property and ecological systems are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors.
38	Any topsoil [natural or manufactured], or subsoil, to be imported shall be assessed for chemical or other potential contaminants in accordance with a scheme of investigation which shall be submitted to and approved in writing by the Local Planning Authority in advance of its importation. Only material approved by the Local Planning Authority shall be imported. All measures specified in the approved scheme shall be undertaken in accordance with the relevant Code of Practice and Guidance Notes. Subject to approval of the above, sampling of the material received at the development site to verify that the imported soil is free from contamination shall be undertaken in accordance with a scheme and timescale to be agreed in writing by the LPA. Reason: To ensure that the safety of future occupiers is not prejudiced.
39	Any aggregate (other than virgin quarry stone) or recycled aggregate material to be imported shall be assessed for chemical or other potential contaminants in accordance with a scheme of investigation which shall be submitted to and approved in writing by the Local Planning Authority in advance of its importation. Only material approved by the Local Planning Authority shall be imported. All measures specified in the approved scheme shall be undertaken in accordance with the relevant Code of Practice and Guidance Notes. Subject to approval of the above, sampling of the material received at the development site to verify that the imported material is free from contamination shall be undertaken in accordance with a scheme and timescale to be agreed in writing by the LPA. Reason: To ensure that the safety of future occupiers is not prejudiced.
40	Any site won material including soils, aggregates, recycled materials shall be assessed for chemical or other potential contaminants in accordance with a sampling scheme which shall be submitted to and approved in writing by the Local Planning Authority in advance of the reuse of site won materials. Only material which meets

	site specific target values approved by the Local Planning Authority shall be reused. Reason: To ensure that the safety of future occupiers is not prejudiced.
41	Prior to the commencement of any development works an assessment of the risk from mine gas* shall be submitted to the Local Planning Authority for its approval. This assessment must be carried out by or under the direction of a suitably qualified competent person**. The report of the findings shall include: (i) Not required (ii) an intrusive investigation and monitoring programme*** to assess the site for the presence of gases which may be present, if identified as required by the desk-based review. (iii) an assessment of the potential risks from mine gas to human health and property (iv) an appraisal of gas protection options and justification for the preferred option(s). All work and submissions carried out for the purposes of this condition must be conducted in accordance with the CL:AIRE, 2021. Good practice for risk assessment for coal mine gas emissions CL:AIRE, Buckinghamshire. ISBN 978-1-905046-39-3 unless the Local Planning Authority agrees to any variation. * 'The term 'mine gas' refers to gas with the principal components being methane, carbon dioxide carbon monoxide, hydrogen sulphide and deoxygenated air. ** A 'suitably qualified competent person' would be expected to have a recognised relevant qualification, sufficient experience in dealing with mining legacy related issues and membership of a relevant professional organisation. **Any intrusive activities which disturb or enter any coal seams, coal mine workings or coal mine entries require a Coal Authority Permit. Reason: To ensure that the safety of future occupiers is not prejudiced.
42	Prior to the commencement of any development, a mine gas* protection scheme and verification plan must be carried out by or under the direction of a suitably qualified competent person** and submitted to the Local Planning Authority for its approval. The submissions shall include the proposed details of the scheme to ensure the safe and inoffensive dispersal or management of gases and to prevent lateral migration of gases into or from land surrounding the application site, together with a verification plan to demonstrate the effectiveness of the scheme. All work and submissions carried out for the purposes of this condition must be conducted in accordance with the CL:AIRE, 2021. Good practice for risk assessment for coal mine gas emissions CL:AIRE, Buckinghamshire. ISBN 978-1-905046-39-3 unless the Local Planning Authority agrees to any variation. * 'The term 'mine gas' refers to gas with the principal components being methane, carbon dioxide, carbon monoxide, hydrogen sulphide and deoxygenated air. ** A 'suitably qualified competent person' would be expected to have a recognised relevant qualification, sufficient experience in dealing with mining legacy related issues and membership of a relevant professional organisation. Reason: To ensure that the safety of future occupiers is not prejudiced.

43	Prior to the occupation of any of the development works a verification report undertaken by or under the direction of a suitably qualified competent person*, demonstrating the completion and effectiveness of the protection scheme approved by condition 42 above must be submitted to and approved in writing by the Local Planning Authority. * A 'suitably qualified competent person' would be expected to have a recognised relevant qualification, sufficient experience in dealing with mining legacy related issues and membership of a relevant professional organisation. Reason: To ensure that the safety of future occupiers is not prejudiced.
44	No development shall commence on the Hydrogen Production Facility until a scheme for the comprehensive and integrated drainage of the site, showing how foul, roof and hardstanding surface water will be dealt with. This must include future maintenance requirements to be submitted and approved in writing by the Local Planning Authority; the approved scheme must be implemented prior to beneficial use. Reason: to ensure that effective drainage facilities are provided for the proposed development and that surface water flood risk is not increased.
45	No development shall commence on the Solar Farm until a scheme for the comprehensive and integrated drainage of the site, showing how foul, roof and hardstanding surface water will be dealt with. This must include future maintenance requirements to be submitted and approved in writing by the Local Planning Authority; the approved scheme must be implemented prior to beneficial use. Reason: to ensure that effective drainage facilities are provided for the proposed development and that surface water flood risk is not increased.
46	No development shall commence on the sites until a suitable infiltration test, sufficient to support the design parameters and suitability of any proposed infiltration system, has been submitted to and approved in writing by the Local Planning Authority; the approved scheme must be implemented prior to beneficial use. Reason: to ensure that effective drainage facilities are provided for the proposed development and that surface water flood risk is not increased.
47	No surface water and/or land drainage shall be allowed to connect directly or indirectly with the public sewerage network. Reason: To prevent hydraulic overloading of the public sewerage system, to protect the health and safety of existing residents and ensure no pollution of or detriment to the environment.
	The following are advisory notes and not conditions: **a) Highways:** The Developer is reminded that consent under the Town and Country Planning Act 1990 conveys no approval under the Highways Act 1980 for works to be undertaken affecting any part of the public highway including verges and footways and that

	before any such works are commenced the developer must: • obtain the approval of Bridgend County Borough Council as Highway Authority to the details of any works to be undertaken affecting the public highway. • indemnify the County Borough Council against any and all claims arising from such works. • give not less than one calendar months' notice in writing of the date that the works are to be commenced to the Policy, Development and Transport Team Leader, Bridgend County Borough Council, Civic Offices, Angel Street, Bridgend. Telephone No. (01656) 642541.
	b) Land Drainage: 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 To satisfy the condition 44, the applicant must: • 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 and Flood Risk Activity Permit (FRAP) 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. • Submit a Sustainable Drainage Application to the Bridgend SAB – SAB@bridgend.gov.uk In order to satisfy the drainage, condition the following supplementary information is required: • Provide surface water drainage layout (including location of proposed soakaway, if required). • Provide infiltration tests to confirm acceptability of any proposed infiltration system in accordance with BRE 365. • Provide a plan showing locations of trial holes and at least 3 separate tests at each trial hole location. • Provide information about the design calculations, storm period and intensity, the method employed to delay and control the surface water discharged from the site and the measures taken to prevent the pollution of the receiving groundwater and/or surface water system. • Provide a timetable for its implementation; and • Provide a management and maintenance plan, for the lifetime of the development and any other arrangements to secure the operation of the scheme throughout its lifetime. • Maintenance of any proposed sustainable drainage features serving this site will remain the responsibility of the landowner

	C) DCWW If the development will give rise to a new discharge (or alter an existing discharge) of trade effluent, directly or indirectly to the public sewerage system, then a Discharge Consent under Section 118 of the Water Industry Act 1991 is required from Welsh Water. Please note that the issuing of a Discharge Consent is independent of the planning process and a consent may be refused although planning permission is granted. The applicant may need to apply to Dwr Cymru / Welsh Water for any connection to the public sewer under S106 of the Water industry Act 1991. If the connection to the public sewer network is either via a lateral drain (i.e., a drain which extends beyond the connecting property boundary) or via a new sewer (i.e. serves more than one property), it is now a mandatory requirement to first enter into a Section 104 Adoption Agreement (Water Industry Act 1991). The design of the sewers and lateral drains must also conform to the Welsh Ministers Standards for Gravity Foul Sewers and Lateral Drains and conform with the publication "Sewers for Adoption"- 7th Edition. Further information can be obtained via the Developer Services pages of www.dwrcymru.com The applicant is also advised that some public sewers and lateral drains may not be recorded on our maps of public sewers because they were originally privately owned and were transferred into public ownership by nature of the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011. The presence of such assets may affect the proposal. To assist us in dealing with the proposal the applicant may contact Dwr Cymru Welsh Water on 0800 085 3968 to establish the location and status of the apparatus. Under the Water Industry Act 1991 Dwr Cymru Welsh Water always has rights of access to its apparatus.
	d) Coal Authority: The proposed development lies within an area that has been defined by the Coal Authority as containing coal mining features at surface or shallow depth. These features may include mine entries (shafts and adits); shallow coal workings; geological features (fissures and break lines); mine gas and former surface mining sites. Although such features are seldom readily visible, they can often be present and problems can occur, particularly as a result of new development taking place. Any form of development over or within the influencing distance of a mine entry can be dangerous and raises significant land stability and public safety risks. As a general precautionary principle, the Coal Authority considers that the building over or within the influencing distance of a mine entry should be avoided. In exceptional circumstance where this is unavoidable, expert advice must be sought to ensure that a suitable engineering design which takes into account all the relevant safety and environmental risk factors, including mine gas and mine-water. Your attention is drawn to the Coal Authority Policy in relation to new development and mine entries available at: www.gov.uk/government/publications/building-on-or-within-the-influencing-distance-of-mine-entries Any intrusive activities which disturb or enter any coal seams, coal mine workings or coal mine entries (shafts and adits) requires a Coal Authority Permit. Such activities

	could include site investigation boreholes, excavations for foundations, piling activities, other ground works and any subsequent treatment of coal mine workings and coal mine entries for ground stability purposes. Failure to obtain a Coal Authority Permit for such activities is trespass, with the potential for court action. If any coal mining features are unexpectedly encountered during development, this should be reported immediately to the Coal Authority on 0345 762 6848. Further information is available on the Coal Authority website at: **www.gov.uk/government/organisations/the-coal-authority**
	e) Shared Regulatory Services: The contamination assessments and the effects of unstable land are considered on the basis of the best information available to the Planning Authority and are not necessarily exhaustive. The Authority takes due diligence when assessing these impacts, however you are minded that the responsibility for (i) determining the extent and effects of such constraints (ii) ensuring that any imported materials (including, topsoils, subsoils, aggregates and recycled or manufactured aggregates/ soils) are chemically suitable for the proposed end use. Under no circumstances should controlled waste be imported. It is an offence under Section 33 of the Environmental Protection Act 1990 to deposit-controlled waste on a site which does not benefit from an appropriate waste management license. The following must not be imported to a development site: - Unprocessed / unsorted demolition wastes. - Any materials originating from a site confirmed as being contaminated or potentially contaminated by chemical or radioactive substances. - Japanese Knotweed stems, leaves and rhizome infested soils. In addition to section 33 above, it is also an offence under the Wildlife and Countryside Act 1981 to spread this invasive weed; and (iii) the safe development and secure occupancy of the site rests with the developer. Proposals for areas of possible land instability should take due account of the physical and chemical constraints and may include action on land reclamation or other remedial action to enable beneficial use of unstable land.

JANINE NIGHTINGALE
CORPORATE DIRECTOR COMMUNITIES

Background Papers
none

APPENDIX A

Summary of Main Technical Reports Submitted with Application P/23/218/FUL:

1.0 Climate Change Statement by RPS (June 2023)

1.1 A Climate Change Statement has been prepared in support of the Hybont Green Hydrogen Project, (Hydrogen Production Facility and Solar Farm).

1.2 The Statement report details the construction and operational emissions associated with both sites and considers the following:

- Embodied carbon emissions (associated with material extraction, manufacture and processing) for elements of both sites
- Operational emissions arising from the Hydrogen Production Facility energy demand only and
- Displaced emissions enabled by the hydrogen produced through the avoidance of more carbon intensive alternative fuels assuming a business-as-usual fossil fuel combustion.

1.3 The Statement report comprehensively reviews UK wide policy, Welsh Government policy and the policies of this Council. The report acknowledges that the assessment of embodied carbon associated with the construction of the project, and operational emissions associated with the administration building, relies on existing published information and benchmarks.

1.4 The concluding section of the report confirms that the project is being promoted within the 'UK Hydrogen Strategy' (HM Government, 2021), in facilitating the expansion of green hydrogen supply through the pairing of the Hydrogen Production Facility alongside a solar PV array (Solar Farm), with remaining energy demand met largely by wind supply. Minimal energy will be supplied from wholesale grid electricity, which is anticipated to be required during periods of low renewable production combined with an insufficient quantity of stored hydrogen. It is considered that this grid electricity supply is necessary for the successful operation of the Facility. The allotment of grid electricity will be consistent with the threshold required by the Low Carbon Hydrogen Standard and, as such, associated reported emissions should be considered a worst-case scenario. Further, as the grid decarbonises in line with current policy requirements, emissions associated with grid electricity are anticipated to reduce, resulting in reduced operational emissions.

1.5 The report states that green hydrogen production will assist both the UK and Welsh Government in the achievement of power system decarbonisation targets – over its lifetime the project will result in the avoidance of 127,161 $tCO2e^{i}$ emissions through the adoption of hydrogen fuel for transport and heating. This will displace the requirement for fuels associated with greater emissions, such as natural gas and diesel.

1.6 The report claims that such avoided emissions will greatly exceed those caused as a result of the construction and operation of the project. The greatest source of emissions associated with the project over its lifetime will be from those arising from the construction of the solar PV array (Solar Farm) at the Bryncethin Site. This will result in 12,287 tCO2e, equal to 93% of the total embodied carbon associated with both sites. Embodied carbon emissions arising from the Hydrogen Production Facility at the Brynmenyn Site have been estimated to total 926 tCO2e, 7% of the total embodied carbon associated with both sites. All operational emissions will arise from the energy demand of the Brynmenyn Hydrogen Production Facility. A total range of 12,927 tCO2e to 25,392 tCO2e emissions over the Facility's lifetime will result largely from the hydrogen electrolysers, alongside the cooling and compression of hydrogen produced.

1.7 When accounting for the above-described avoided emissions, the report indicates that the project will achieve a payback period of 4 years. In other words, after 4 years of operation the Facility will have resulted in avoided emissions that exceed those associated with its construction and whole life operational energy demand and, as such, over its lifetime the proposed Facility will enable the local and national energy system decarbonisation progress.

1.8 Additionally, the inclusion of hydrogen storage allows system flexibility – electrolytic hydrogen production during periods of increased renewable supply can allow excess electricity to flow across different parts of the energy system, allowing system benefits such as helping to balance the grid and integrating hydrogen into our power system.

1.9 Despite the magnitude of embodied carbon emissions associated largely with the construction of the solar PV array (Solar Farm), the construction of such energy infrastructure should be considered necessary in order to displace the use of fuels associated with increased emissions and provide a means for the continued decarbonisation of the UK economy.

2.0 Transport Statement by RPS (March 2023)

2.1 The Transport Statement considers the transport issues surrounding the proposed development of the two sites. The report reviews the baseline conditions, describing the transport and highway characteristics of the surrounding areas. An analysis of the respective developments is provided detailing the proposed access and parking arrangements. An assessment of the number of trips likely to be generated by the development based on the scale of the production process (Hydrogen Production Facility) and the operation of the Solar Farm.

2.2 In conclusion, both development sites are considered to be low trip generators, especially during their operational phases. The Solar Farm is likely to generate only sporadic vehicle trips when maintenance is required. The purpose of the Hydrogen Production Facility will be to store and transport hydrogen, and as a refuelling station, and will employ four full time staff members supported by an additional four corporate staff and specialist sub-contractors who will visit the site on an ad hoc basis. Many of the vehicles accessing the Facility are already on the network and therefore are not considered to be new trips.

2.3 The Transport Statement considers that the locations of both sites are considered suitable to meet the demands of the proposals, with the Hydrogen Production Facility located on the edge of an existing Industrial Estate, purpose built to accommodate larger HGVs. Access to the Hydrogen Production Facility will be promoted from the Brynmenyn Industrial Estate, via Squire Drive, an internal industrial road, which currently serves other industrial units. Car and cycle parking will be provided, (one is an accessible parking space). These will be used by staff and visiting contractors. The development will result in approximately four staff employed on site, with sub-contractors and ancillary staff on site occasionally. This level of parking is therefore sufficient to meet staffing demand. Operational demand from other vehicles refuelling will be accommodated at the refuelling stations; it is not envisaged that these vehicles would remain onsite for any longer than needed to refuel.

2.4 Access into the Solar Farm is promoted from Blackmill Road via the BCBC Bryncethin Depot, which the Transport Statement suggests will allow vehicles to access and egress the development site without issue.

2.5 Based on the above, the Transport Statement concludes that in transportation terms, there are no overriding or sustainable reasons why the development proposals should not be approved.

3.0 Noise Impact Assessment (NIA) Solar Farm by RPS (September 2024)

3.1 The NIA report considers the impact of noise from the proposed Solar Farm and the cumulative effect when assessed together with the proposed Bridgend Hydrogen Production Facility.

3.2 The NIA has been carried out in accordance with the methodology in Technical Advice Note (Wales) 11. TAN 11 states noise from industrial development should be assessed according to British Standard 4142:2014+A1:2019 '*Methods for rating and assessing industrial and commercial sound*' (BS 4142) methodology, which is the industry standard methodology for the assessment of commercial and industrial sound.

3.3 In order to establish baseline sound conditions at the nearest Noise Sensitive Receptors (**NSRs**), two (2) unattended long-term (**LT**) sound level monitors were on site over a 7-day period from 14:15 hours on 4th October 2022 to 14:15 hours on 11th October 2022.

3.4 In order to calculate noise impacts associated with operation of the proposed development, a 3D sound model has been built at NSRs using SoundPLAN v8.2 noise modelling software. The model predicts sound levels under light down-wind conditions based on hemispherical sound propagation with corrections for atmospheric absorption, ground effects, screening and directivity based on the procedure detailed in ISO 9613-2:1996 '*Acoustics - Attenuation of sound during propagation outdoors - Part 2: General method of calculation'*. The noise generating aspects of the development included in the model are summarised giving details of the assumed power level of each noise source and how they have been modelled in the assessment. The daytime assessment is based on a one-hour assessment period, whilst the night-time assessment is a 15-minute assessment as required by BS 4142:2014+A1:2019.

3.5 Worst-case assumptions have been made with regards the noise sources on site using sound power levels for the plant from British Standard BS 5228-1:2009, CIBSE Guide 4 and the RPS SoundPlan data library. Any alterations to the acoustic performance of these noise sources will result in a change of noise level at the Noise Sensitive Receptor.

3.6 The BS 4142:2014+A1:2019 initial estimate of impact indicates that rating sound levels are all at least 4 dB below background sound levels. In BS 4142:2014+A1:2019 terms, a low impact is predicted to occur at NSRs considered within this assessment, depending on the context. This is the lowest category available within BS4142.

3.7 However, Shared Regulatory Services (**SRS**) request no more than -10 dB below background initially; where this is not achievable, -5 dB would usually be accepted with justification. An assessment of the context surrounding the development has been undertaken in accordance with BS41412:2014+A1:2019 which found the impact from the proposed development is likely to be low and giving the finding of the context assessment this has been deemed to be acceptable.

3.8 Taking into account the context, the BS 4142:2014+A1:2019 initial estimate of impact is confirmed and therefore no adverse impacts, significant or otherwise, are predicted at any of the NSRs during any of the assessment periods. On the basis of the above, it is concluded that the development is compliant with the requirements of local policies and the SRS.

4.0 Technical Note to Noise Assessment (September 2024)

4.1 RPS has been commissioned by Marubeni Europower Ltd to identify and design a noise mitigation strategy for the proposed Bridgend Green Hydrogen Scheme. RPS undertook an initial noise impact assessment in March 2023 to identify the potential for an adverse noise impact at the existing Noise Sensitive Receptors. Since the initial noise impact assessment (REF: JAJ03178 -REPT-01-R2) RPS and Marubeni Europower Ltd have undertaken an extensive mitigation and design review of the development to reduce any potential noise impacts to a minimum. As part of this review, RPS have investigated potential noise mitigation measures, alternative plant, site re-designs and undertaken further acoustic modelling following discussions with plant manufacturers.

4.2 Follow a detailed review of plant and practical mitigation measures, the table below details the mitigation measure which are proposed to be installed:

Plant Item	Mitigation measure	Approximate Acoustic Reduction provided
Process chiller (reciprocating compressor)	Specification of equipment with Acoustic Jackets	7dB
Dispenser vents	Minimal operation - Operating for approximately 0.07% of station operational time approximately (~1 minute per day), during the daytime only	N/A
Process chiller (Dispenser Chiller)	Specification of equipment with Acoustic Jackets	7dB
Air compressor	Quieter Plant identified.	-20 dB
HGV movements	5 mph speed limit on site.	best practice measures
Acoustic Barrier	8 m wallwall at a minimum density of 15 kg/m^2 with no gaps or holes. along the southern and eastern perimeter of the site.	Up to 10 dB reduction at the receptors
local directional noise screen on fin-fan exhausts	LocalisedL screening of the fin fan units of the electrolysers	Up to an additional 2 dB reduction at the receptor

Plant Item	Mitigation measure	Approximate Acoustic Reduction provided
HV substation	Transformer housed within block work substation building.	Rw 30 dB
Electrolyser Package	Reduced fan speeds for *air fin-fan* Exhaust vent silencers Low oxygen vent velocityy	10 dB
	Reorentation of plant to minimise directional noise to the south, towards Leyshon Way.	3 dB Reduction at the receptors to the South.
Reciprocating compressor	Enclosures within 100 mm of rockwool insulation.	Rw 39 dB
MP1000 Compressor	Partial enclosures consisting of 50 mm rockwool insulation within the HPU. Insulation cannot be added to the compressor room due to fire risk.	Rw 32 dB

4.3 The proposed development has been modelled based upon the worst-case scenario while including the proposed mitigation measures. The initial noise impact assessment found that the proposed development scheme had the potential to have a low impact during the daytime period and low to adverse during the night-time period.

4.4 The proposed development is unlikely to have any readily identifiable characteristics given the existing high ambient sound level and the existing industrial estate to the north. Furthermore, the proposed development will not cause an increase to the existing ambient levels during either the daytime or night-time periods.

4.5 It should also be noted that during the particularly sensitive night-time period residents would be inside their properties and benefit from noise attenuation provided by their building facades. As shown in the Technical Note (September 2024), the internal ambient noise levels will not change and should not cause a change in behaviour of the residents.

4.6 For the reasons set out in this context section the potential noise impact from the proposed development is unlikely to be significant.

4.7 In accordance with BS4142:2014+A1:2019, when assessing the potential noise impact in context, the potential noise impact is expected to be Low during both the daytime and night-time periods at all Noise Sensitive Receptors.

4.8 The acoustics Team at RPS Environment (RPS) has undertaken a BS4142:2014+A1:2019 noise impact assessment with the proposed mitigation measures implemented to assess the potential noise impact on the Noise Sensitive Receptors (**NSRs**).

4.9 The initial noise impact found that the proposed development has the potential to have a low impact during the daytime period and a low to adverse impact during the night-time period, depending on context.

4.10 However, when considered against the high existing ambient sound level, it is unlikely that the proposed development will cause an adverse impact and the predicted sound levels are unlikely to cause any change in behaviour of existing residents.

4.11 Residents on Davis Avenue and Rowans Lane are already experiencing high ambient sound levels during the night-time periods which would exceed internal guideline noise levels, therefore residents are unlikely to have open windows for passive ventilation. Furthermore, the proposed development will not increase the ambient noise level at any of the existing Noise Sensitive Receptors, reducing the potential for a significant adverse impact.

4.12 In addition, give the character of the existing acoustic environment, consisting predominantly of road traffic noise and existing industrial noise from the established industrial estate, it is unlikely that noise from the proposed development will be readily identifiable.

4.13 In accordance with BS4142:2014+A1:2019, when assessing the potential noise impact in context, the potential noise impact is expected to be Low during the daytime and night-time periods at all Noise Sensitive Receptors.

4.14 In accordance with Welsh planning policy, local planning authorities must ensure that noise generating development does not cause an unacceptable degree of disturbance. However, this does not mean that adverse effects cannot occur.

4.15 Design and mitigation measures have been incorporated into the development to reduce to a minimum any potential adverse noise impacts on Noise Sensitive Receptors. In doing so, the Noise Assessment has demonstrated that the proposed development can integrate with the local area, without being of detriment to the existing noise climate.

4.16 Therefore, should planning permission be granted, we would suggest that suitably worded conditions are attached covering compliance monitoring, an operational noise management plan and active noise management in response to any complaints about noise.

5.0 External Lighting Scheme and Assessment by RPS November 2023

5.1 The external lighting scheme for the Hydrogen Production Facility has been designed in accordance with the requirements of BS EN 12464-2 Lighting of Workplaces – Part 2: Outdoor workplaces (Table 5.11 — Power, electricity, gas and heat plants).

5.2 LED fittings have been used for energy efficiency and luminaire optics and profiles selected to minimise upward light contribution of the fittings.

5.3 The main lighting is derived from post top mounted luminaires mounted on 6m columns.

5.4 There are existing residences (human receptors) about 100m – 150m from the site and the scheme has been designed to comply with CIE 150: Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations with regards to limitation of bright luminaires in the field of view.

5.5 The Bat Report concludes that there are no roosting bats currently using the site although trees within the northern section of woodland have suitability for bats. The site is used by a low number

of foraging pipistrelles. Other bat species pass through the site occasionally and the woodland provide bat flightlines. The woodland also provides habitat for nesting birds.

5.6 To mitigate against the potential harm to protected species, a warm white spectrum (<3000 Kelvin) has been utilised to reduce blue light component. Luminaires feature peak wavelengths higher than 550nm (nanometre) to avoid the component of light most disturbing to bats. Lighting will be located around the operational areas of the Hydrogen Production Facility. There will be minimal light spill on woodland within the site.

5.7 The report concludes that the design and specification of lighting will not have any adverse impacts on local human receptors or the favourable conservation status of protected species. External lighting will be controlled by time clock and photocell override for all external areas with some less trafficked areas having motion detection override. The site will only be illuminated as and when required.

6.0 Utility & Emissions Summary by Mott Macdonald (January 2023)

6.1 The purpose of this technical document is to identify the average consumption and/or peak rates for utilities and emissions for the development, to enable preliminary determination of external utility connection requirements, utility equipment sizing, dispersion behaviour and environmental permitting impact. The report supports preliminary selection of utility equipment types and layout of the development.

7.0 Air Quality Assessment by RPS (March 2023)

7.1 The Air Quality Assessment (**AQA**) considers the air quality impacts from the construction and operational phases and has been based on information provided by the Applicant company.

7.2 For the construction phase, the most important consideration is dust. Without appropriate mitigation, dust could cause temporary soiling of surfaces, particularly windows, cars and laundry. The mitigation measures provided within this AQA report should ensure that the risk of adverse dust effects is reduced to a level categorised as '*not significant'*.

7.3 For the operational phase, arrivals at and departures from the development may change the number, type and speed of vehicles using the local road network. Changes in road vehicle emissions are the most important consideration during this phase of the development.

7.4 Detailed atmospheric dispersion modelling has been undertaken for the first year in which the development is expected to be fully operational, 2025. Pollutant concentrations are predicted to be well within the relevant health-based air quality objectives at the building façades of existing receptors. Using the criteria adopted for this assessment, together with the assessors professional judgement, the operational air quality effects are considered to be '*not significant'* overall.

7.5 The AQA report concludes that the Green Hydrogen Project development does not, in air quality terms, conflict with national or local policies, or with measures set out in Bridgend County Borough Council's Air Quality Action Plan. There are no constraints to the development in the context of air quality.

8.0 Ecological Impact Assessment by RPS dated November 2023

8.1 Summary of Effects:

The proposed Hydrogen Production Facility will require the removal of areas of low value grassland and woodland which lie within the Tyncoed Farm Bryncethin SINC. Higher value woodland along the northern boundary habitat will be retained. New areas of grassland and tree

and shrub planting will be created within the proposed Hydrogen Production Facility and the management will seek to enhance the biodiversity value of habitats during the operational phase.

8.2 There are no anticipated impacts of the development on other designated sites.

8.3 Proposed Solar Farm

8.4 The majority of habitat within the proposed Solar Farm will be retained.

8.5 There would be a permanent loss of small areas of grassland, scrub and trees to facilitate the construction of access roads and infrastructure within the proposed Solar Farm.

8.6 Areas of grassland, primarily the marshy grassland and species-poor semi-improved grassland will be subject to temporary disturbance.

8.7 If solar panels and the access track are removed from the semi-improved acid grassland supporting upright chickweed and the current grazing conditions maintained, there would be no significant effects on the species and habitat.

8.8 With mitigation measures implemented, temporary habitat disturbance at worst would have a low magnitude impact on features of biodiversity value and would have only negligible significance.

9. Landscape and Visual Impact Assessment by RPS (March 2023)

9.1 RPS were commissioned by Marubeni to prepare a Landscape and Visual Impact Assessment (**LVIA**) to accompany the Planning Application. Its objective is to identify the likelihood of the Proposed Developments giving rise to significant landscape and/or visual effects, and to propose effective and appropriate measures to mitigate such effects where possible.

9.2 For this LVIA, a desktop review of published information, including landscape character assessments, OS data, online mapping data, aerial photography and local planning documents was undertaken. To further inform the LVIA, representative views looking towards the Application Site were selected. The following figures have been produced to support the LVIA as follows:

- Figure 1: Site Location and Landscape Planning Designations
- Figure 2: Zone of Theoretical Visibility (ZTV) and Representative Viewpoint Locations
- Figure 3.1 to 3.13: Representative Viewpoint Panoramas
- Figure 4: Topography and Drainage
- Figure 5: National Landscape Character Areas (NLCA)
- Figure 6: LANDMAP Landscape Visual and Sensory Aspect Areas
- Figure 7: LANDMAP Landscape Visual and Sensory Aspect Areas (Overall Evaluation)
- Figure 8: LANDMAP Landscape Habitats Aspect Areas
- Figure 9: LANDMAP Cultural Landscape Aspect Areas
- Figure 10: LANDMAP Historic Landscape Aspect Areas
- Figure 11: LANDMAP Geological Landscape Aspect Areas
- Figure 12: Local Landscape Character; and,
- Figure 13: Local Landscape Character (including ZTV).

9.3 The assessor carried out a site visit in Autumn / Winter 2022 / 2023, to record views from the Representative Viewpoint locations and other publicly accessible locations, as well as to gain an understanding of the local landscape character. Fieldwork assisted in the assessment of the potential effects on the landscape character of the Application Sites and surrounding landscape, as well as on visual receptors. The relevant planning background and policies have been reviewed and the landscape baseline is outlined together with the visual baseline.

9.4 The method used to undertake this LVIA is detailed and is based on the following documents:

- Landscape Institute and Institute of Environmental Management and Assessment, Guidelines or Landscape and Visual Impact Assessment: Third Edition (May 2013).
- Landscape Institute Technical Guidance Note 02/21: Assessing landscape value outside national designations (May 2021).
- Landscape Institute, Landscape Institute Technical Guidance Note 06/19 Visual Representation of Development Proposals (September 2019).

9.5 The LVIA provides an overview of the existing or baseline conditions, and then assesses the potential significant effects of the proposed development upon these baseline conditions during its construction and operational phases. This is undertaken through consideration of the sensitivity of the resources/receptor to the potential impact of the proposed Development.

9.6 The introduction of built form to a site without any/many buildings will result in landscape and/or visual change. This report identifies whether these changes are significant or not in terms of the physical landscape and its character, and when viewed by visual receptors (people) from the surrounding area.

9.7 The landscape and visual effects of the development are summarised as follows:

- The Development would introduce a relatively small-scale solar renewable energy development within an area of open grassland that is irregular in shape and a green hydrogen plant on a similarly open area of grassland at the edge of the existing settlement of Bryncethin. The areas of open grassland are not currently used for agricultural purposes and have no public access. They are bounded by a mixture of mature trees and woodland, with existing development to their northern and north-western boundaries.

- The Solar Farm Application Site is bounded by woodland to the north, east and south, with local roads to the north (Cefn Carfan Road), west (A4061 Blackmill Road) and the B4280 Pant Hirwaun to the south. There are a number of other local roads, within Bryncethin, that are local to the Application Site.

- The Hydrogen Production Facility Application Site is located within a generally enclosed landscape with substantial layered vegetative cover to the boundaries, which would be retained where possible as part of the Proposed Development.

- The Solar Farm element of the Proposed Development is located on sloping ground at the edge of Bryncethin. As such, the Application Site is visible within views from the surrounding area to varying degrees, but particularly from areas to the south.

- There would be no substantial earthworks required to alter the topography, but some vegetation removal would be required, such as off Squire Drive to provide an access to the hydrogen plant.

- There is existing electrical infrastructure within the local landscape in the way of large electricity pylons and overhead cables, with some longer distance views to wind turbines. There are also solar parks at some distance from the Application Site but not within the local vicinity. As such, the proposed development would introduce new built elements of renewable energy infrastructure into this partly contained location. Given its containment, the temporary nature of the Solar Farm and its close proximity to the existing urban area of Bryncethin, potential effects upon the character of the local, district and the national landscape as a result of the Proposed Development would be not significant.

- With respect to effects upon views, a low-lying development of this type, particularly the Solar Farm element of the Proposed Development, and of this scale, would cause some localised obstruction to near distance views. Of the visual receptors and Representative Viewpoints included in the LVIA assessment, it is considered that the proposed Development would give

rise to a significance of effect upon views of no greater than '*Minor adverse'*, at winter Year 1 and / or summer Year 15. Following the establishment of mitigation planting and the management of existing vegetation, primarily within the Solar Farm, whilst there would be some beneficial effects upon views, there would still remain a residual significance of effect of no greater than '*Minor adverse'*, particularly within views from the more elevated positions to the north of the Application Site. Over time, the potential visual effects of the Proposed Development would diminish, but it would remain visible and would therefore result in some residual and local adverse effects. These effects would be not significant.

- The nature of views, beyond the immediate vicinity to the proposed development, with layered vegetation and topographical variation would partially or entirely obstruct views to much of the proposed Development. However, there would be no point within the local landscape where the proposed Development as a whole, i.e. the Solar Farm and the hydrogen plant together, would be visible.

- Overall, the quality and character of the landscape and visual resources would be largely maintained for the lifetime of the proposed Development. It is considered that the local landscape would have the capacity to accommodate the proposed Development without significant landscape and / or visual effects.

10.0 **Addendum to Landscape and Visual Impact Assessment (Hydrogen Production Facility) by RPS (September 2024)**

10.1 In response to concerns raised by Bridgend County Borough Council (BCBC), RPS has been commissioned by Marubeni to prepare a Landscape and Visual Impact Assessment (**LVIA**) Addendum, focusing on views from the A4065 to the east / southeast of the Hydrogen Production Facility located off Squire Drive.

10.2 The objective of this LVIA Addendum is to identify the likelihood of the Proposed Development giving rise to significant visual effects when viewed from locations along the A4065 to the east / southeast, representative of views from residential properties located along Rowan's Lane.

10.3 Viewpoint: Located on the roadside footway, adjacent to the A4065, to the southeast of the Application Site:
This viewpoint is looking generally northwest from the roadside footway with the A4065 in the immediate foreground. Beyond the road, a mature hedgerow and trees to the west side of the A4065 foreshortens possible views from this location, particularly from passing vehicles. A sizeable gap in the hedgerow, with a timber post and rail fence, allows views towards the Application Site. A substantial belt of mature trees, along the southern and eastern boundary of the Application Site, prevents any discernible views to any part of the Application Site. Where the tree line is thinnest, at the lower branches, there are glimpsed heavily filtered views to a very small part of the neighbouring Brynmenyn Industrial Estate with a very small part of the existing white coloured buildings partially visible through the treeline. No other part of the Brynmenyn Industrial Estate is discernible within the view or breaks in the treeline. Any glimpsed views to this very small part of it would likely go unnoticed by road users and pedestrians using the roadside footway.

10.4 Viewpoint: Located on the roadside footway, adjacent to the A4065, to the southeast of the Application Site
This viewpoint is looking generally northwest from the roadside footway with the A4065 in the immediate foreground. Beyond the A4065 the roadside hedgerow has not continued, with only a timber post and rail fence. A mature tree line / block following the southern and eastern Application Site boundary prevents any discernible view to the Application Site from this location. Where the tree line is thinnest, generally a lower level, there are glimpses beyond and over the Application Site towards the existing Brynmenyn Industrial Estate. However, there is no discernible view to any existing built form, seen as small areas of white in Representative Viewpoint 1. To the north of the Representative Viewpoint, there are glimpsed views to some built form within a small part of Brynmenyn, seen through the tree line along the A4065. Other

than this small area of built form and the road itself and fence line, there is no other built form discernible within the view.

10.5 Potential Visual Effects: During the temporary construction phase, activities such as the use of low plant, vehicle movements and material storage would be visible from the surrounding landscape to varying degrees, where not obstructed by existing vegetation, topographical variation and / or existing built form, particularly along the vehicular routes. Construction activities may result in the loss of some existing vegetation and would become more readily apparent within views as construction progresses, and as these new and emerging built elements gradually increase in size. However, due to the finished maximum height of the hydrogen plant, the extensive vegetation cover and topographical variation, potential visual effects would mostly be comparable to those of the completed operational phase of the Proposed Development.

10.6 An extensive hedgerow with trees along the western edge of the A4065 largely prevents views to the Application Site from the southeast and east. Beyond this, where there are gaps and where only the timber post and rail fence is located, there are views to the southern / eastern Application Site boundary. A mature tree belt prevents any discernible view to any part of the Application Site, particularly in summer months. Where there are gaps, although very limited, or possibly during winter months there may be glimpsed views to very small parts of construction activities within the Application Site. However, the majority of construction activities within the Application Site would not be visible from any part of the A4065 or neighbouring residential properties along Rowan's Lane with a general outlook to the west. Where short lived glimpsed views are available, in winter months only, these would have a limited characterising effect upon views from the A4065, roadside footway or neighbouring residential properties, with no discernible view to the majority of the construction site. Overall, there would be a *Negligible magnitude* of impact as a result of some views to very small parts of the temporary construction activities during winter only. Road users are visual receptors of Low to Medium sensitivity with residential properties being High. The temporary construction works would result in a *Negligible to Minor adverse significance* of effect, which would be not significant.

10.7 Data submitted with the LVIA has indicated potential intervisibility to a part of the A4065 to the east of the Application Site. At completion, winter Year 1, the substantial tree line to the southern/ eastern boundary would remain, having been retained as part of the Proposed Development. This would screen potential views to the majority of the completed hydrogen plant. In winter months, with the trees and other vegetation devoid of leaf cover, there may be glimpsed heavily filtered views to a very small part of the Proposed Development from a small section of the A4065 heading north towards Brynmenyn, the roadside footway and neighbouring residential properties. Any small parts of the Proposed Development seen in heavily filtered views would be of the acoustic barriers, with no discernible views of the structures beyond within the main body of the Proposed Development. With an appropriate colour selection, i.e. a muted green, being selected for the acoustic barrier, any views to it would not represent an obvious feature within available views and would not have a marked affect upon the baseline view which would remain largely unchanged even in winter.

10.8 Very small parts of the Proposed Development would be visible, but this would not substantially change the overall composition of the view, with a *Negligible magnitude* of impact upon views for road user on the A4065 and neighbouring residential properties (Low to High sensitivity visual receptors). This would result in a *Negligible to Minor adverse significance* of effect at winter year 1, which is not significant.

10.9 By summer year 15, intervening vegetation, retained and managed as part of the Proposed Development, would be in full leaf further preventing any possible views to the Proposed Development. Where there are gaps, a very small part of the Proposed Development would be discernible. Similar to winter views, this would be to small sections of the acoustic barrier only/ Using an appropriate green colour for the barrier would blend it into the retained vegetation. As a result, and views to it would largely go unnoticed and have a very limited effect upon available views. The overall significance of effect would reduce to *Negligible adverse* (approaching *No*

Effect). The effects would be not significant.

11.0 Coal Mining Risk Assessment by RPS Consulting Services (September 2022)

11.1 The submitted Coal Mining Risk Assessment indicates that both the Brynmenyn Site and the Bryncethin Site are underlain by coal workings and the potential for ground subsidence issues associated with shallow coal workings, including underground working and potential opencast extraction (associated with the clay pit in the north of the Solar Array site) is considered to be moderate to high.

11.2 In terms of Coal Mining Risk, Solar arrays are not considered consented developments and as such the requirement for treatment works is indistinct. The assessor recommends that in advance of development, intrusive works are undertaken to better characterise the potential risks, particularly given the complexity of the geology across the site, the potential for backfilled clay pit, shallow workings and mine shafts across the site. This should be accompanied with general ground investigations to establish the stability in regard to potential backfill of the former clay pit. The report recommends that two (onsite) mineshafts which have been treated should be located along with any other remaining shafts. As the majority of the development on the site will be lightweight solar panels (and where underlying risk is considered acceptable) stabilisation works where shallow workings are observed in the north of the site may not be necessary. Where the switchgear and control rooms are to be built, the Coal Mining Risk Assessment report recommends that treatment works are considered. Targeted ground investigation should be undertaken in these locations to establish the risks from mine workings including ground gas assessments.

11.3 The development footprint of the Hydrogen Production Facility is outside the development high risk area and away from the location of the coal seam outcrops. The report however acknowledges that the potential for shallow workings to be present is a risk. Site investigations are recommended to confirm a suitable thickness of bedrock and/or depth to shallow mine workings is undertaken. The depth of ground investigation works will be partially dependent upon the final foundation depth. Should evidence of mineworks be encountered stabilisation treatment would be required prior to development.

11.4 There is potential for shallow workings to be present beneath the hydrogen pipeline (now omitted from the Application) and private wire route. Given the nature of the private wire route, it is not anticipated that the risk associated with the potential underground works is significant. There are no mine shafts on the routes or within close proximity.

12.0 Geotechnical and Geo-environmental Impact Assessment Reports for Hydrogen Plant Site & Ground Investigation Report by Mott Macdonald (July 2022 and June 2023)

12.1 Ground conditions were confirmed during the Ground Investigation (**GI**) to be fine- (soft to stiff) and coarse-grained (medium dense to dense) Glacial Deposits overlying the South Wales Coal Measures. The Coal Measures comprise varying lithologies including sandstones and mudstones with different degrees of weathering. The investigation works comprised the drilling of four boreholes to a maximum depth of 30.00m below ground level (bgl) and eight trial pits to a maximum depth of 4.50m bgl. Groundwater was encountered during the drilling of each borehole. Groundwater strikes were recorded within the South Wales Coal Measures at depths of between 17.50m bgl and 27.00m bgl. All boreholes were installed with groundwater and ground gas monitoring standpipes, which targeted the South Wales Coal Measures.

12.2 Soil and rock samples were recovered and tested for a range of geotechnical parameters, the results of which are discussed in detail in the report. Characteristic geotechnical parameters were determined for the site and should be reviewed on a structure-specific basis at design stage. Soil samples were recovered for chemical analysis and all samples were considered suitable for use with regards to human health. Ground gas and groundwater level monitoring, carried out over six monitoring rounds has not identified any potential risks associated with

ground gas. Groundwater sampling identified marginally elevated concentrations of metals within the groundwater, likely associated with the underlying geology that are unlikely to pose a significant risk. The monitoring has also identified petroleum and polyaromatic hydrocarbons, however as there is no known source of these compounds on site; it is highly likely that these contaminants are originating offsite.

12.3 The nature of the proposed foundations, their loading and movement tolerance have not been identified at this stage, however it is understood that the foundations are expected to be relatively lightly loaded and therefore shallow foundations within the Glacial Deposits are provisionally considered to be suitable. Depending on the loads and movement tolerances, localised ground improvement (e.g., dig and replace) may be required if shallow foundations are located within the fine Glacial Deposits.

12.4 Monitoring indicates that groundwater may be encountered in excavations below around 3m bgl; temporary support and/or dewatering measures may be required for excavations.

12.5 No evidence of shallow mine workings was identified during the ground investigation.

12.6 The GI report recommends that the presence of underground services and/or obstructions, including possible land drains, should be considered in the design stage and measures taken to identify and locate services prior to intrusive works. Plant selected for excavation should be capable of excavating cobbles and boulders in the Glacial Deposits.

13.0 Geotechnical and Geo-environmental Impact Assessment Reports for Solar Farm Site & Ground Investigation Report by Mott Macdonald (July 2022 and June 2023)

13.1 Consistent with the findings of the Phase 1 Desk Study Report, Made Ground of considerable thickness has been identified on site. The Made Ground on site has been found to be highly variable, comprising predominantly of fine layers interbedded with coarse layers of sands, gravels and colliery spoil. Across most of the site, the fine deposits of the Made Ground are considered soft to firm at depth, with very soft deposits identified between 3.4 to 6.4m. Underlying the Made Ground is the South Wales Coal Measures, comprising of mudstones and sandstones.

13.2 Results of groundwater monitoring confirms a shallow groundwater table on site. This may contribute to excavation instability and as such this should be factored into the design of the proposed structure and any associated temporary works as it is likely that excavation supports, and dewatering will be required.

13.3 The Desk Study Report highlighted a risk associated with former mine workings and recommended that additional investigations be undertaken. The Desk Study Report also highlighted a risk associated with former mine workings and recommended that additional investigations be undertaken. The report recommends the following:

- A re-appraisal of the mining risk may be required at detailed design stage depending on the magnitude of the loadings and foundation type adopted. This risk assessment should be updated using the findings of this Ground Investigation Report along with the Johnson, Poole and Bloomer investigation report referenced within the RPS report in order to fully characterise the mining risk on this site.

- Prior to construction additional vegetation clearance and specific targeted geophysical surveys (e.g. electrical resistivity surveys) are undertaken to prove or disprove the presence of any remaining shallow mine workings/entrances where previous surveys were unable to elucidate information.

- A design and construction exclusion zone is established surrounding all recorded (proven and unproven) mine entries to mitigate their potential influence upon the scheme.

13.4 The geo-environmental soil test results indicate that the soils on site are unlikely to pose a risk to human health with regards to any future site users when assessed against the criteria for human health for Industrial/Commercial land uses. There are no indications that the materials present on this site would pose any unusual risks to construction workers.

13.5 Over the majority of the site no significant ground gas risk has been identified with elevated ground gas concentrations limited to a single location (BH110) which is not located in the vicinity of either the proposed control building or substation.

14.0 Flood Consequence Assessment with Update

14.1 RPS have prepared a Flood Consequence Assessment for both sites.

14.2 The document outlines the potential for the site to be impacted by flooding, the impacts of the proposed development on flooding in the vicinity of the site, and the proposed measures which could be incorporated into the development to mitigate the identified risk. The report has been produced in accordance with the guidance detailed in the Planning Policy Wales and Technical Advice Note 15 (TAN15): Development and Flood Risk. Reference has also been made to the Bridgend County Borough Council Preliminary Flood Risk Assessment (PFRA) and Local Flood Risk Management Strategy (LFRMS). It has been produced in consultation with the Natural Resource Wales (NRW) and the Local Drainage Authority (BCBC).

14.3 The potential flood risks to the site, and the measures proposed to mitigate the identified risks, are summarised in the table below:

Source of Flooding	Comment	Overall Flood Risk		
		L	M	H
Fluvial	**Brynmenyn** Not considered to be at significant risk. **Bryncethin** Although the site has mixed 'low' to 'high' risk areas, the built development is proposed outside of the modelled flood extent. The solar panels will be raised off the ground level.	✓		
Tidal	**Brynmenyn** Not considered to be at significant risk.	✓		
Sewers	**Bryncethin** Not considered to be at significant risk.	✓		
Surface Water	**Brynmenyn** Not considered to be at significant risk. **Bryncethin** Although the site has mixed 'low' to 'high' risk areas, the built development is proposed outside of the modelled flood extent. The solar panels will be raised off the ground level.	✓		
Groundwater	**Brynmenyn** Not considered to be at significant risk.	✓		
Other Sources (e.g. reservoirs, water mains)	**Bryncethin** Not considered to be at significant risk.	✓		

14.4 The Hydrogen Production Facility site is located in Zone A and is outside of all modelled flood extents. No other sources of flood risks were identified.

14.5 The Solar Farm site has areas located Zone C2, however all built development is within Zone A. No other significant sources of flood risks were identified.

14.6 It has been demonstrated that the development passes the Justification Test.

14.7 Separate drainage strategies prepared by Mott MacDonald in November 2022, ensure that each site can attenuate surface water up to and including the in 100 year + 40% climate change

rainfall event. Overall, it can be demonstrated that the development will have positive effects of flood risk and surface water management.

15.0 Drainage Strategy Report – Hydrogen Production Facility and Solar Farm Site by Mott MacDonald (November 2022)

Proposed Drainage Strategy: Hydrogen Production Facility Site

15.1 The drainage strategy for the Hydrogen Production Facility site only includes permanent works associated with the Hydrogen substation. Drainage strategy for the permanent works is to accommodate surface runoff from the proposed impermeable areas for the design storm event plus the allowance for climate change. Runoff will be conveyed to an attenuation pond via a site surface drainage system.

15.2 Due to the lack of watercourses nearby the site and the no-permeability of the site, the Hydrogen Production Facility site surface water drainage is proposed to discharge into existing Welsh Water storm drain manhole, located at the southern end of Squire drive. The pond will discharge into an existing manhole by Welsh Water at limited flow rate of 5l/s.

Proposed Drainage Strategy: Solar Farm Site

15.3 The drainage strategy for the Solar Farm PV site includes permanent works associated with the Solar Farm PV Site and temporary works for the construction phase. Drainage strategy for the permanent works is to accommodate surface runoff from the proposed impermeable areas(access roads and substation) for the design storm event plus the allowance for climate change. Runoff will be conveyed to an attenuation pond via a site surface drainage system. The pond will discharge to the nearest watercourse at limited flow rate of 5l/s.

15.4 Following the hierarchy of the SuDS guidance, where it is not possible to infiltrate into the ground, discharging to the closest watercourse at a restricted discharge rate is proposed. The Solar Farm PV site will propose to discharge into an existing watercourse. Constructing a new outfall to the river would require consent from Land Drainage.

16.0 Construction Environmental Management Plan by RPS (August 2024)

16.1 The submitted CEMP provides an outline of construction practices during the construction phase and sets out the proposed measures to minimise impact of noise, vibration, dust etc. The CEMP sets out the outline management measures which its contractors will be required to adopt and implement for the construction of the development to avoid and manage any construction effects on the existing surrounding environment.

16.2 The CEMP comprises the following further sections:

- Site Arrangements
- Construction Impact Management on the Environment including Mitigation Objectives and Measures in respect of Construction Noise and Vibration, Dust and Air Quality, Spillage Control, Storage, Traffic Management and Waste Management
- Ecological Resources including Mitigation Measures in respect of Woodland, Invasive Species, Birds, Bats, Reptiles, Dormice, Great Crested Newts and Badgers.

[i] *tCO2e stands for tonnes (t) of carbon dioxide (CO2) equivalent (e).*