

**REFERENCE:** P/24/788/HAZ

**APPLICANT:** Hybont Limited 95 Gresham Street, London, EC2V 7AB

**LOCATION:** **Proposed HyBont Hydrogen Production Facility Land at Brynmenyn Industrial Estate Brynmenyn CF32 9TX**

**PROPOSAL:** Hazardous Substances Consent for the storage and use in an industrial process of Schedule 1 Part 2 No. 15 (Hydrogen) at the proposed HyBont Hydrogen Production Facility

**RECEIVED:** 18 December 2024

### **APPLICATION/SITE DESCRIPTION**

Hybont Limited have applied for Hazardous Substance Consent under Section 7 (1) of The Planning (Hazardous Substances) Act 1990 and Regulation 5 of The Planning (Hazardous Substances) (Wales) Regulations 2015 for the storage of 3.60 tonnes (maximum quantity) of Hydrogen at the Hydrogen Production Facility which is proposed on land south of Brynmenyn Industrial Estate.

As part of the application a brief overview of the main activities that will be carried out on the land to which the application relates has been provided. This is re-produced in full below along with the Substance Location Plan:

*The Hydrogen Production Facility shall be able to operate independently as a combined hydrogen production, storage, and hydrogen refuelling station site. The facility will be manned in order to facilitate maintenance and the operation of the site.*

#### Hydrogen Production

*The hydrogen production facility will consist of the following key components:*

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

*For electrolysis, multiple (3) electrolyser modules are expected to be required in order to reach suitable reliability and availability. It is anticipated that containerised power system (transformer/rectifier) and electrolyser packages will be employed for this project. Stack modules up to 2.5MWe are expected to fit in the dimensions of a 40ft ISO-container based on availability of products on the market.*

#### Hydrogen Compression

*For filling tube trailers/buses/HGVs, hydrogen is compressed to 500barg through:*

- *2x 50% reciprocating compressors (30 to 100barg)*
- *2x 50% hydraulic gas boosters [compressors] (100 to 300barg)*
- *2x 50% hydraulic gas boosters [compressors] (300 to 500barg)*

*The resulting 500barg is used for storage/dispensing.*

#### Hydrogen Analysis

*For safety and proving hydrogen quality throughout the site (from production, before/after compression, before dispensing etc.), Gas analysers are used to measure hydrogen, oxygen, water, and various other impurities.*

### Hydrogen Storage

Hydrogen product not directly used for dispensing is stored in cylinders at the fixed MP (Medium Pressure) Hydrogen Storage location and/or in tube trailers which will be stored in dispensing bays on site when not in use. The storage (incl. tube-trailers) shall be sized nominally for 1.5 days of normal hydrogen production i.e. up to 2.85 tonnes of hydrogen, which is expected to be suitable to decouple the daily and weekly fluctuations in power supply and hydrogen demand (**refer to item 11 on Substance Location Plan**)

### Hydrogen Dispensing

Hydrogen will be dispensed from the site either by:

1. Tube-trailers – The tube-trailers will be used to distribute hydrogen to remote consumers. Hydrogen shall be loaded into tube-trailers at the tube-trailer loading bays (**refer to item 18 on Substance Location Plan**). The tube-trailers are expected to be up to 380 bar trailers.

2. Vehicle fuel dispensing – The hydrogen refuelling station will be fed from the permanent/fixed MP Hydrogen Storage at up to 500 barg. The refuelling facility will comprise of 3 Hydrogen Dispensing Units for HGVs/buses (hydrogen vehicle dispenser bays) (**refer to items 17 and 19 on Substance Location Plan**), suitable for refuelling hydrogen vehicles at up to 350 bar.

The application form requires details of how the relevant substance is proposed to be transported to and from the land to which the application relates, for example the size and frequency of vehicle deliveries. The applicant has provided the following information in response:

Transported to Site: Typically, no hydrogen will be transported to site. However, in abnormal operating cases there could be a requirement to transport circa 463kg of external hydrogen to the site. Tube trailers can only be discharged down to a minimum pressure ~20 bar and therefore it is anticipated that there will be a residual amount of hydrogen contained within the tube trailers which access the site. This will not be discharged at the site.

Transported from Site: Tube-Trailer Loading - The tube-trailers will be used to distribute hydrogen to off-site consumers. Hydrogen will be loaded into hydrogen tube-trailers using the tube-trailer loading bays. The tube-trailers are expected to be up to 380bar trailers. A trailer filling time of approximately 4 hours will be targeted. It is anticipated that tube trailers will be filled and transport Hydrogen every day, with a maximum Tube trailer filling flow rate of 125.8kg/hr.

Hydrogen Refuelling Station Vehicle Dispensing: The hydrogen refuelling station Hydrogen Dispensing Units will be fed from the permanent MP Hydrogen Storage tanks to dispense at up to 350 bar. The dispensers will be used to refuel Buses and HGVs. The Hydrogen Dispenser Units will be located adjacent to both the Hydrogen Production area and the Hydrogen Storage areas of the facility. Vehicle dispensing max flow rate = 216kg/h.

The application form provides details of the vicinity of the land to which the application relates and states that the site lies adjacent to the existing Brynmenyn Industrial Estate. The closest residential receptor, 77 Rowans Lane, lies approximately 36m to the east of the application site and some 57m from the nearest hydrogen dispenser and storage tank, separated by the A4065. The surrounding land uses are residential to the east, industrial/commercial to the north/north-west and open land to the south beyond which lies further residential development (approx. 200m). Hybont Ltd expects that approximately four staff will be employed on site once operational.

The application form includes an overview of the measures taken or proposed to be taken to limit the consequences of a major accident on site. HyBont's response is reproduced in full below:

*Hazard Identification Review (HAZID) was completed in September 2022 for the production and storage of Hydrogen on-site. Additional HAZID was undertaken by the appointed EPC (Engineering, Procurement, Construction) Contractor in October 2023. Further Hazard & Operability Review (HAZOP) and Quantitative Risk Assessment (QRA) will be undertaken to identify and evaluate potential safety risks and required safeguards once the EPC Contractor has been appointed and while the detailed design is carried out. Layer of Protection (LoPA) Review to consider the effectiveness of the proposed safeguards and Safety Integrity Level (SIL) to assess the probability that a functional safety system will not fail when it is needed will also be undertaken once the EPC Contractor has been appointed.*

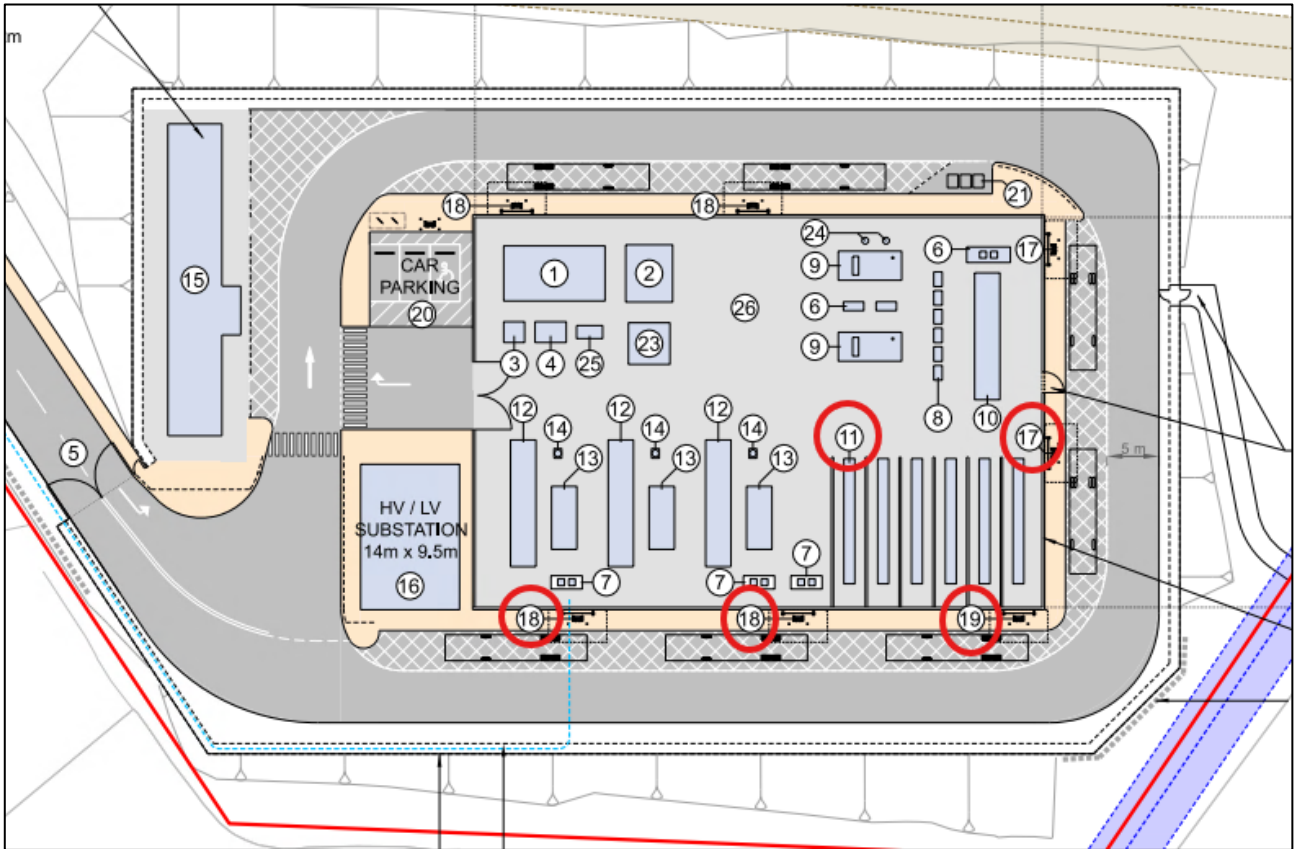
*The following control measures will be in place to limit the consequences of a major accident hazard:*

- Production and permanent storage areas will only be accessible to trained staff and will be subject to systematic maintenance checks following approved methods. This will eliminate 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 will be implemented to avoid potential future risks. For example, to reduce the risk of small hydrogen leaks, the number of mechanical joints on hydrogen pipework will be minimised. 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.*
- Recognising the movable storage (tube-trailer) volumes as a significant site hazard, Tube-trailers were positioned as far north-west as reasonably practicable (away from residents to South & East aspects).*

The application includes a list of all the potentially hazardous substances (other than hydrogen) that are anticipated to be used / generated / associated with this Hydrogen facility. Hybont Limited have advised that the quantities of these substances are yet to be confirmed but they will be in sufficiently small quantities so as not to exceed the controlled quantities that trigger the need for hazardous substances consent. They include the following:

- Lubrication Oil
- Water Polishing Resin

- Drier Desiccant (Aluminate Silicate)
- Water Softener (Sodium Chloride)
- Purge Gas (Nitrogen)
- Coolant (Propylene Glycol and Ethylene Glycol)
- Activated Carbon (Pre-treatment of RO/EDI System)



**Figure 1 Substance Location Plan**

Planning Circular 20/01 'Planning Controls for Hazardous Substances' confirms that in Wales a system of hazardous substances consent operates under the Planning (Hazardous Substances) Act 1990 and The Planning (Hazardous Substances) (Wales) Regulations 2015. The controls require consent to be obtained for the presence on, over or under land of a hazardous substance in an amount at or above a specified controlled quantity. The controls give hazardous substances authorities, in this case, Bridgend County Borough Council, the opportunity to consider whether the proposed storage or use of the proposed quantity of a hazardous substance is appropriate in a particular location, having regard to the risks arising to persons in the surrounding area and to the environment. The hazardous substances authority must consult bodies including the Health and Safety Executive (HSE), Natural Resources Wales (NRW) and other bodies set out in the regulations before making a decision on any application for consent. If consent is agreed, as a matter of practice, a consultation zone will be established within which proposals for future development will also be referred to consultees to consider effects on public safety.

The hazardous substances consent controls are designed to regulate the presence of hazardous substances so that they cannot be kept or used above specified quantities until the responsible authorities have had the opportunity to assess the risk of an accident and its consequences for people in the surrounding area and for the environment. Hazardous substances authorities can decide whether, in the light of the residual risk, and having regard to existing and prospective uses of a site and its surrounding environment, the proposed presence of a hazardous substance is an appropriate land use of that site.

The requirement for hazardous substances consent does not override the need for planning permission to be obtained where development of land is also involved. Where both planning permission and hazardous substances consent are required, as in the case of the HyBont development, two separate applications will be necessary, and the respective statutory requirements must be followed. This does not necessarily mean that similar decisions need be given on both applications, as there may be considerations which are material to one application but not to the other. As far as possible, it will, be desirable and appropriate for detailed control over the manner in which a hazardous substance is to be kept or used to be regulated by hazardous substances consent conditions.

The role of HSE and NRW is to advise the hazardous substances authority on the risks arising from the presence of hazardous substances. HSE has the expertise to assess the risks arising from the presence of a hazardous substance to persons in the vicinity; NRW has the expertise to assess and advise upon the likely risks arising to the environment. However, the decision as to whether the risks associated with the presence of hazardous substances, either to persons or to the environment, are tolerable in the context of existing and potential uses of neighbouring land is one which should be made by the hazardous substances' authority, in this case Bridgend County Borough Council.

The Planning Circular reminds authorities that in considering hazardous substances consent applications, regard must be given to the provisions of the adopted development plan, so far as it is material to the application. The Policies of the Replacement Bridgend Local Development Plan are therefore relevant. The overarching objectives of the European Legislation in which the Hazardous Substance Regulations are founded are:

- to prevent major accidents and limit the consequences of such accidents for man and the environment.
- in the long term, to maintain appropriate distances between establishments and residential areas, areas of public use and areas of natural sensitivity or interest; and,
- in relation to existing establishments, for additional technical measures so as not to increase risks to people.

#### RELEVANT HISTORY

Application Reference	Description	Decision	Date
<b>P/97/427/FUL</b>	Extension to Light Industrial Unit	Conditional Consent	17 June 1997
<b>P/22/572/SOR</b>	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.
<b>P/23/218/FUL</b>	Development of a green hydrogen production facility and installation of solar farm.	No decision	

#### PUBLICITY

The application has been advertised on site and in the press prior to its submission under the Planning (Hazardous Substances) (Wales) Regulations 2015. As part of the consultation

process following the registration of the application, neighbours have been notified, and the application has been advertised on site and in the local press. The period allowed for response to consultations/publicity expired on 31 January 2025.

## CONSULTATION RESPONSES

**St Brides Minor Community Council:** express strong objection to the proposed construction of the HyBont plant. Whilst we understand the importance of transitioning to renewable energy sources and the potential benefits of green hydrogen, we believe this project raises several significant concerns that must be addressed before any further steps are taken.

### Environmental Impact

Firstly, the environmental impact of constructing and operating such a facility cannot be overlooked. Although green hydrogen production is marketed as a cleaner alternative, the production process still requires a substantial amount of energy, and we believe that the proposed solar site to be built in conjunction with HyBont, will not provide sufficient power for this. Additionally, the construction of the plant itself involves significant land disruption, potential harm to local ecosystems, and an increase in noise, traffic, and air pollution during the build phase. There must be a thorough, transparent environmental impact assessment that addresses these potential harms and ensures that the local flora and fauna are protected, as well as taking into consideration the excess traffic that will use the A4061 and A4065 to access the site, and the disruption this extra traffic will cause.

It must be remembered that these roads are the main access/egress for two valleys, and are already over congested, so the addition of construction traffic will not help.

### Risk of Accidents and Safety Concerns

Hydrogen, despite being a clean energy source, is also highly flammable and poses significant safety risks. Hydrogen's unique properties make it a powerful yet potentially dangerous energy source. As a colourless, odourless gas, hydrogen leaks are difficult to detect. Hydrogen's molecular size compounds the issue, as it can easily escape from hydrogen infrastructure, including pipelines and storage tanks, increasing the risk of leaks.

Adding to the risk, hydrogen ignites with very low energy, roughly one-tenth of what is required for natural gas. Once ignited, it burns rapidly, releasing energy that can cause significant damage. The absence of visible flames during combustion adds another layer of danger, making fires harder to detect and allowing them to spread. This makes it volatile in confined spaces or near ignition sources, of which there are numerous sources on the Brynmenyn industrial estate.

The proximity of the proposed plant to residential areas raises concerns about the potential for accidents. In the event of a hydrogen leak or explosion, the consequences could be catastrophic for the surrounding community. It is crucial that stringent safety measures and emergency response plans are not only proposed but also rigorously tested and communicated to the public to ensure the safety of all residents.

However, that said, it must be taken into consideration that the Hazardous Area Response Team (HART) are located in close proximity to the proposed site and will, in all probability, be caught up in any explosion that may occur. HART is a specialist team specially trained and equipped to deal with incidents involving hazardous chemicals and large-scale incidents, and they cover the whole of South Wales and part of Mid Wales. Therefore, the emergency response would be very diluted, if not at all, as the specialist service required for such an incident would likely be unable to attend, and any future incident in the HART response area will be unable to have "the specialists" present.

Furthermore, we remain unconvinced about the number of staff that will be present. Given that only 4 persons are expected to be employed full time once the plant is up and running, this raises concern as to how safe the plant will be. Article 3(6) of The Management of Health and Safety at Work Regulations 1999 states that:

Where the employer employs five or more employees, he shall record—

- (a) the significant findings of the assessment; and
- (b) any group of his employees identified by it as being especially at risk.

Therefore, there are no assurances that Health and Safety will be taken as seriously as it should be due to the fact that any significant findings will not have to be recorded.

### Economic Considerations

The economic implications of the plant must also be scrutinized. While job creation and economic stimulation are cited as benefits, it is only expected that 4 persons will end up in full time employment, whilst other businesses close to the site may end up having to shut down and lay people off due to the emissions created during the construction phase. Additionally, should the construction phase bring in outside labour, there appears to be very little long-term economic benefit to the existing community. Moreover, there should be an analysis of how the plant might affect property values in the area. The presence of an industrial facility like this can often lead to a decrease in property values, impacting homeowners and the local economy adversely.

### Community Consultation

The process by which this proposal has been introduced is also a point of contention. Genuine community consultation appears to have been minimal. It is vital that the voices of those who will be most affected by the plant are heard and considered. Public meetings, surveys, and open forums were not very well advertised which suggests that there is a lack of transparency in the decision-making process. As a community council, elected to represent the local community, we are presenting the community's concerns. The local community are already aware that approximately £150,000 of council money was spent carrying due diligence before it was decided that BCBC could not afford to continue. The local community would like to know how that “wasted” money is going to be replaced, without having to raise council tax above the level of inflation.

Finally, as a community, and its council, we are all in favour of new technologies to help find greener solutions however, we feel that this is not the correct location as it does not balance the need for renewable energy with the well-being of the local population.

### Alternative Locations

There must be an exploration of alternative locations for the plant that might mitigate the concerns raised. Placing such a facility in a less densely populated area could reduce the environmental and safety risks to residential communities. The feasibility of these alternatives should be thoroughly investigated and presented to the public as part of a comprehensive site selection process.

### Cumulative Impact

Additionally, the cumulative impact of this project in conjunction with other existing or planned developments in the area should be considered. The addition of the green hydrogen plant to our community may exacerbate traffic congestion, strain local infrastructure, and further degrade the quality of life for residents. A holistic view of all proposed and existing projects is necessary to ensure that the overall impact on the

community is manageable and sustainable.

### Conclusion

In conclusion, while we recognize the potential benefits of green hydrogen as a renewable energy source, the proposed location of the plant near our community presents numerous concerns that cannot be overlooked. We urge the planning committee to conduct a thorough review of the environmental, safety, economic, and social impacts of this project. Furthermore, we call for genuine community engagement in the decision-making process and the consideration of alternative locations that would mitigate the risks to our community.

**Cllr Tim Thomas - Local Member (Speaker):** 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. My original comments and objection remain as I see no difference from the previous application in that the proposed development is still too close to residential properties.

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 have 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. Given the above reasons, I object to the proposal.

**Health and Safety Executive:** The Health and Safety Executive has assessed the risks to the current population in existing developments surrounding the activities, resulting from the granting of Hazardous Substances Consent P/24/788/HAZ.

Only the risks from hazardous substances for which Consent is being sought have been assessed. HSE has assessed the risk of harm from the maximum quantity of hazardous substances for which Consent is being sought. Risks which may arise from the presence of other substances have not been taken into account in this assessment.

HSE has not been able to take account of any proposed developments in the surrounding areas that have been granted planning permission but are not yet built. This may also apply to existing developments that did not appear on the maps accompanying the consent application. Since this may affect our advice, please consult the HSE again if there are any such developments within the consultation zones proposed on the map referred to below.

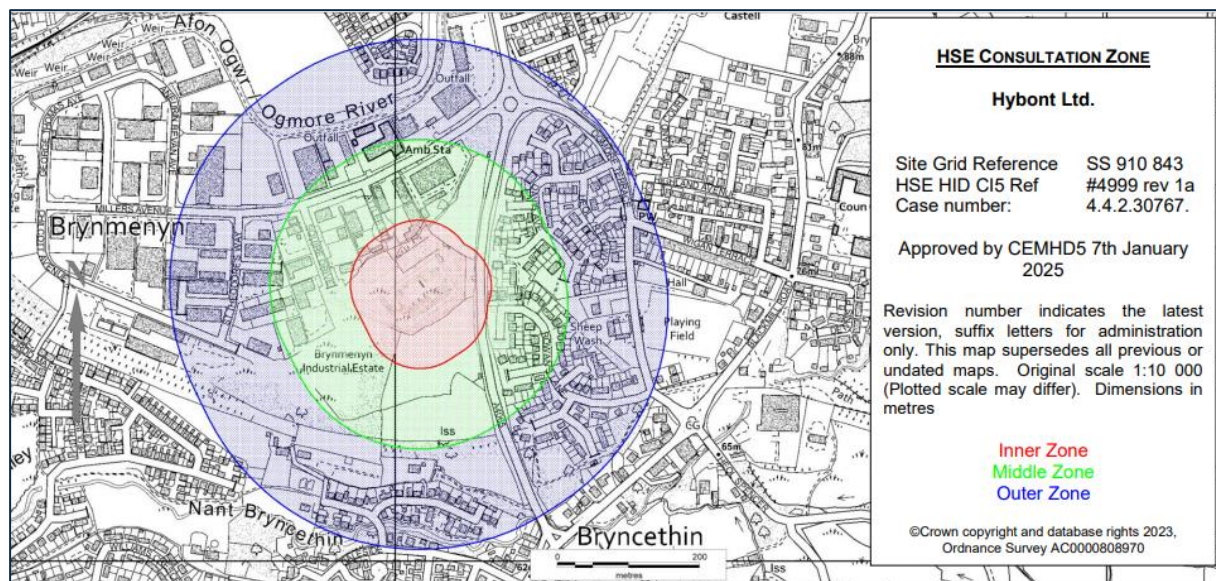
In considering this application for Consent, HSE has made the assumption that the requirements of the Health and Safety at Work etc. Act 1974, and all relevant statutory provisions, will be met at the establishment should Consent be granted. **On this basis, HSE has concluded that the risks to the surrounding population arising from the**

**proposed operation(s) are so small that there are no significant reasons, on safety grounds, for refusing Hazardous Substances Consent P/24/788/HAZ.**

Following Government advice that particulars in the application form do not automatically become conditions of consent, it would be beneficial to include the following condition:

*"The hazardous substance shall not be kept or used other than in accordance with the application particulars provided on the application form, nor outside the areas marked for storage of the substance(s) on the plan(s) which formed part of the application P/24/788/HAZ."*

A consultation area, made up of the set of zones marked on the attached map, has been determined. Unless we hear from you in the near future that the application has been refused, this map will be placed within the HSE's land use planning web app.



**Natural Resources Wales:** We have no objection to the application as submitted and provide the following advice:

'The application for HSC states the proposal is for the storage of 3.6 tonnes of hydrogen and "Tube-trailer movements shall be controlled to ensure total quantity of hydrogen on site - maximum of 4 tube trailers allowable on site at any one time." The HSC thresholds for hydrogen (and other liquified gases) is lower than the Control of Major Accident Hazards (COMAH) thresholds.

Application P/24/82/HAZ was for the storage of 4.99 tonnes of hydrogen. A proposed Inventory Management Philosophy/Procedure (contained in an email from Andrew Lee (Tuesday, April 30, 2024)), was submitted for application P/24/82/HAZ. This demonstrated how the Applicant intended to control and manage the inventory to make sure the hydrogen inventory stays below the COMAH 5 tonne threshold.

This application proposes a reduced maximum inventory of 3.6 tonnes of hydrogen. We note an Inventory Management Philosophy/Procedure has not been submitted for this application\*. We advise the Applicant they can use the same Inventory Management Philosophy/Procedure as submitted for P/24/82/HAZ, to make sure the hydrogen inventory stays below the COMAH 5 tonne threshold'.

\*NB An updated Inventory Management Philosophy/Procedure has been submitted and forwarded to NRW

for comment.
<b>Highways:</b> No objection.
<b>Shared Regulatory Services – Pollution Control:</b> This will be for the HSE to comment as they will be the Regulator for that aspect of the operation. Therefore, Shared Regulatory Services would not comment on this application.
<p><b>South Wales Fire Service:</b> The site plan/s of the above proposal has been examined, and the Authority would wish the following comments to be brought to the attention of the planning committee/applicant. It is important that these matters are dealt with early on in any proposed development: The Fire Authority has <u>no objection</u> to the proposed development and refers the Local Planning Authority to any current standing advice by the Fire Authority about the consultation. The developer should also consider the need for the provision of: -</p> <p>a. adequate water supplies on the site for firefighting purposes; and b. access for emergency firefighting appliances</p>

## REPRESENTATIONS RECEIVED

This application has been the subject to a significant level of objection in the form of 41 letters and emails from residents and businesses in the Bryncethin, Brynmenyn and Sarn area. A limited number of objections have also been received from outside the community.

Residents have offered objections that are specific to this application for Hazardous Substance Consent but have also taken the opportunity to repeat concerns that are relevant to the companion land use application, P/23/218/FUL. The summary of objections will focus on those concerns that are material to this application:

- BCBC has no experience in consenting and managing such facilities – the Council is landowner, customer, and planning authority – a conflict of interest.
- The HSE has already advised against granting Hazardous Substances Consent for this project, - the level of risk was unacceptably high. How can this be addressed? BCBC are ignoring the advice of the Health and Safety Executive. Marubeni cannot be trusted with Health & Safety issues.
- Other Hazardous Substances may be stored on site – these would require Control of Substances Hazardous to Health (COSHH) consent, but no reference has been made to these in either application.
- The site is in close proximity to residential properties, businesses and public infrastructure - residents should not be exposed to undue risks - no consideration has been given to those who hold assets nearby and thus would be devalued (such as houses and land) prior to this possible development. Inappropriate location for a dangerous untested facility.
- Reducing the storage capacity of Hydrogen in no way diminishes the danger that the plant will present as it is the Hydrogen Production Facility that poses the greatest risk to the surrounding area. Smaller tube trailers make no difference to the location of the facility – too near to the community. Re-fuelling points have been moved closer to businesses.

- By reducing the storage capacity to enable the Council rather than the HSE to be responsible for granting the necessary safety licence, shows complete disregard for the safety of residents and workers.
- Hydrogen storage tanks are supposed to be limited to 3.6 tonnes, but the site is capable of storing more.
- Firewalls insufficient when an explosion happens, community still within blast range with no suitable evacuation plan. The estate only has one ingress and egress. So, if a major event happened at the Brynmenyn site, it would likely mean nobody on the entire industrial estate could leave for a very long time. This doesn't appear to have been considered.
- The HSE response does not seem to mention the inventory management method statement that suggests additional hydrogen, exceeding the inventory storage of circa 1.7T would be stored in tube trailers - limiting other tube trailers to stay beneath the planned 3.6T. Has this been presented to HSE and considered?
- The appointment of an EPC contractor is vague. Safety evaluations should be done before approval, not retrospectively. For the community to buy into the development, safety should be transparent and be seen to be transparent.
- There is no lightning conductor mentioned in any of the plans, and surely, despite the procedures in para 5(f) of the application, this is a material omission.
- Contradictions in the submission and accompanying documentation - Table A of the HAZ substance consent application states 3.6 tonnes is the maximum amount of hydrogen stored on site. Para 1.6 of the Transport Statement Addendum for P/23/218/FUL has it as 3.8 tonnes). Also, conflict in the proposed production levels set out in the HAZ application and the figures set out in the Climate Change Statement.
- The planning application still includes both low and medium pressure hydrogen storage vessels, whilst the HAZ application only includes the medium pressure storage, giving doubt as to whether the current HAZ application is correct. P24/788/HAZ contains hydrogen storage figures which do not add up and exceed the claimed 3.6 tonne capacity. Plans show the scope for almost doubling the capacity for the storage of hydrogen. New HAZ application is inadequate as the storage capacity is almost double the Control of Major Accident Hazards (COMAH) limit.
- The expected blast range of 581m for houses to be rendered uninhabitable – i.e. 3.6 tonnes H<sub>2</sub> exploding - would affect two schools (Bryncethin Junior and Ysgol Bryn Castell), the ambulance station, the entire industrial estate and 4 or 5 residential developments. This may have a small risk, but, if it happened, the results would be severe especially if ambulances could not be used.
- Will the tube trailers on site (maximum of 4) be used to store hydrogen as a buffer?
- With the same configuration and pressures the site proposes to store less hydrogen – how can this be achieved? The electrolyser ratings on the HAZ application do not match the planning documents, and therefore the quantity of hydrogen which could be produced is higher than stated in P24/788/HAZ.

- The increased fire risk arising from oxygen enrichment has been ignored, there is no evidence that consideration of ATEX zones has occurred, as buildings are not planned to be purged, and the inclusion of an EV charging station in the facility is a flagrant disregard for separating ignition sources from potentially explosive atmospheres.
- BCBC has a duty of care to the residents – another site must be more suitable.

### **COMMENTS ON REPRESENTATIONS RECEIVED**

The following comments below are provided in response to the representations received. Because of the technical nature of a number of the representations, further advice has been sought from the applicant company and Health and Safety Executive, and their comments are also included in the section below.

#### ***BCBC has no experience in consenting and managing such facilities – the Council is landowner, customer and planning authority – a conflict of interest***

The regulations confirm that Bridgend County Borough Council is the hazardous substance authority and will therefore make decisions on such applications. Regulation 9 of the Planning (Hazardous Substances) (Wales) Regulations 2015 (PHSW) requires the Council to consult the competent authority, (COMAH) comprising the Health and Safety Executive and the Natural Resources Wales. Any determination must consider the results of the consultation undertaken.

The Council's role as landowner and future user of the facility has no bearing on the application. There is an erroneous reference in the Transport Statement Addendum to 'council vehicles' in respect of the hydrogen buses. The applicant has confirmed that the buses will not be Council vehicles and will be operated by a third-party provider. HSE have confirmed that ownership of the land and/or any leasing/rental/etc. arrangements are not of material concern to HSE when assessing a Hazardous Substances Consent application. Hazardous Substances Consent (if granted) is attached to the land to which it applies, and ownership/occupancy (including any changes) are immaterial to the consent.

#### ***The HSE has already advised against granting Hazardous Substances Consent... other Hazardous Substances may be stored on site...***

The HSE objected to the previous application on the basis that the risks to the surrounding population arising from the proposed operation, namely the storage of 4.99 tonnes of hydrogen were sufficiently high to justify advising against the granting of Hazardous Substances Consent on grounds of safety. No decision was made on the application, and it was subsequently withdrawn. The Council are now being asked to consider a different application and will have full regard to the advice offered by consultees. HSE acknowledge that other substances will be stored on site but not in quantities that would require Hazardous Substances Consent. The storage would fall under the Control of Substances Hazardous to Health (COSHH) regulations. COSHH regulations require the duty holder to:

- assess the risks that arise from the use of hazardous substances.
- prevent, or if this is not reasonably practicable, control exposure to such substances.
- provide staff with information, instruction and training about the risks, steps and precautions the employer has taken to control these risks.

HSE confirm that once the site is operational then the duty holder will have to comply with COSHH regulations (and be able to provide demonstration of compliance if inspected). However, there is no requirement for the duty holder to notify HSE or the Local Planning Authority of their intentions to use/handle substances to which COSHH regulations apply; and/or demonstrate compliance with COSHH regulations during the process of applying for HSC/planning permission.

***The site is in close proximity to residential properties, businesses and public infrastructure - residents should not be exposed to undue risks - no consideration has been given to those who hold assets nearby and thus would be devalue***

***Reducing the storage capacity of Hydrogen in no way diminishes the danger... Smaller tube trailers make no difference***

In their consultation response, HSE has assessed the risks to the current population in existing developments surrounding the likely activities, resulting from the granting of this Hazardous Substances Consent application and concluded that the risks to the surrounding population arising from the proposed operation(s) are so small that there are no significant reasons, on safety grounds, for refusing Hazardous Substances Consent.

***Hydrogen storage tanks are supposed to be limited to 3.6 tonnes, but the site can store more***

The maximum quantity of hydrogen proposed to be present of 3.60 tonnes includes tube-trailers, where the fixed storage component is 1.5 tonnes. The difference is purely driven by the maximum number and size of tube-trailers proposed to be present on site at any one time, reducing the tube trailer capacity.

***Firewalls insufficient when an explosion happens, community still within blast range with no suitable evacuation plan***

***The HSE response does not seem to mention the inventory management method statement***

The applicant company has indicated that as part of the operation of the facility, they will implement strict emergency planning protocols including an emergency evacuation plan. It should be noted that neither, South Wales Fire and Rescue Service nor the Health and Safety Executive, as the competent authority have provided any objection to the application on emergency evacuation grounds.

As to the remaining points above, HSE confirm that none of the above issues are material to HSE's assessment of a Hazardous Substances Consent Application.

***There is no lightning conductor mentioned in any of the plans***

The Hazardous Substance Consent application solely considers the acceptability of the storage of Hydrogen at the site and therefore the absence of detail relating to lightning conductors is not a matter for consideration in the determination of this application.

***The appointment of an EPC contractor is vague***

The applicant company as confirmed here is no requirement to provide copies of all safety documentation (HAZID/HAZOP/QRA/SIL/LOPA etc.) as part of an application for hazardous substances consent. Safety evaluations are required through various regulatory requirements, including The Construction (Design and Management) Regulations 2015. Safety evaluation works are ongoing and as required throughout different stages of the project lifecycle, including e.g. design stage, construction, and post-construction (operational) to cover the breadth and depth of project safety requirements. All safety evaluation obligations have, and continue to be, fulfilled.

***Contradictions in the submission and accompanying documentation - application states 3.6 tonnes is the maximum amount of hydrogen stored on site but Transport Statement refers to 3.8 tonnes. Infrastructure on site could produce and store more than double the quantity of hydrogen on site proposed by the HSC application and to levels that exceed the low tier defined by the Control of Major Accident Hazards Regulations 2015 (COMAH)***

***With the same configuration and pressures the site proposes to store less hydrogen – how can this be achieved? The electrolyser ratings on the HAZ application do not match the planning documents, and therefore the quantity of hydrogen which could be produced is higher than stated in P24/788/HAZ***

As indicated above, there is an erroneous reference in the Transport Statement Addendum to '3.8 tonnes' of hydrogen. This should read 3.60 tonnes maximum hydrogen inventory.

The applicant company suggest that the perceived inconsistencies referenced by the objectors is due to difference in assumptions used for assessments where HyBont seeks to be conservative when assessing likely impacts on different topics:

1. For Inventory Management, the 1.9 tonnes per day target production figure is used to demonstrate during steady-state operation, the site will not exceed the 3.60 tonnes hydrogen, even with four tube-trailers being loaded with a full day's production, awaiting customer collection. The actual level of hydrogen present on site is therefore likely to be significantly below 3.60 tonnes during normal operations.

Additional fixed storage is available to decouple against higher/lower actual production volumes which will depend on availability of fluctuating renewable power, in order to meet customer low carbon hydrogen delivery requirements which are expected to be on a 'flatter' demand profile.

2. The Climate Change Statement minimum target production of 443.5 tonnes per year (1.3 tonnes per day) is conservatively assumed to demonstrate that HyBont is able to realise the Climate Change benefits described; exceeding this minimum target production will only improve the Climate Change benefits above what has been stated.

3. For Transport: up to six tube-trailer visits per day is considered as a conservative case for transport assessment purposes and demonstrates that HyBont's full capacity could be delivered to customers if required. In normal operation, the number of tube-trailer deliveries per day is limited to four and therefore will likely have a lower impact on transport than conservatively stated.

HSE's assessment of Hazardous Substances Consent application and its subsequent determination by this Authority will be based purely on the details contained with the application form and supporting documentation relating to application 24/788/HAZ. HSE have indicated that any details submitted either in previous Hazardous Substances Consent applications or separate planning applications are not material when determining HSE's advice for a particular Hazardous Substances Consent Application. If it is the decision to grant this consent, it will be to permit the storage of 3.6 tonnes of hydrogen on site irrespective of whether the site has the capacity to produce and/or store more hydrogen.

***The expected blast range associated with the development would affect housing and schools***

In HSE's view, the blast range distance quoted by the objector has been obtained from the Explosives Regulations 2014. The Explosives Regulations 2014 are not applicable to the storage of hydrogen 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 two 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 2.

As such the quoted blast range would not be applicable in this situation. Instead, consultation distances set by HSE's methodology for assessing Hazardous Substance Consent applications involving hydrogen have been applied.

***Will the tube trailers on site (maximum of 4) be used to store hydrogen as a buffer?***

Details of the buffer storage, as well as details regarding the maximum number of tube trailers permitted on site are supplied with HSC application and have been assessed accordingly when determining HSE's advice. If consent were to be granted, these details would form part of the conditions of the consent. The applicant company acknowledge that should the Council grant Hazardous Substances Consent, this will require Hybont to remain within the 3.60 tonne maximum hydrogen inventory. The Inventory Management Philosophy / Procedure is in place to secure this.

***The increased fire risk arising from oxygen enrichment has been ignored, there is no evidence that consideration of ATEX zones has occurred...***

HSE's website confirms that ATEX is the name commonly given to the 2 European Directives for controlling explosive atmospheres:

- Directive 99/92/EC (also known as 'ATEX 137' or the 'ATEX Workplace Directive'): This covers the minimum requirements for improving the health and safety protection of workers potentially at risk from explosive atmospheres. The Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) implement the requirements of this Directive in Great Britain (England, Scotland and Wales).
- Directive 2014/34/EU (also known as 'ATEX 114' or 'the ATEX Equipment Directive'): This covers the approximation of the laws of Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres.

Explosive atmospheres can be caused by flammable gases, mists or vapours or by combustible dusts. If there is enough of the substance, mixed with air, then all it needs is a source of ignition to cause an explosion. The Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) place duties on employers to eliminate or control the risks from explosive atmospheres in the workplace. If these regulations do indeed apply to this operation, they are not considered as part of a Hazardous Substance Consent or planning application.

## **POLICY CONTEXT**

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

### **Policy SP3**

Good Design and Sustainable Place Making



**Policy ENT1**            Employment Allocations  
**Policy DNP9**            Natural Resource Protection and Public Health.

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:**  
**Planning Controls for Hazardous Substances – Circular 20/01**  
**The Planning (Hazardous Substances) Regulations 2015**

#### **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.

#### **APPRAISAL**

The extant circular concerning the Planning Controls for Hazardous Substances confirms that hazardous substances authorities have the opportunity to consider whether the proposed storage or use of the proposed quantity of a hazardous substance is appropriate in a particular location, having regard to the risks arising to persons in the surrounding area and to the environment. Before making any decision, the Council must consult and have regard to observations received from the Health and Safety Executive and Natural Resources Wales before deciding any application for consent. Consideration must also be given to the provisions of the development plan, so far as it is material to the application.

At a national policy level, little advice is given in Planning Policy Wales and Future Wales. In PPW, as part of the objective of directing economic development to the most efficient and most sustainable locations, it does recommend that protection zones around land are identified for premises that hold hazardous substances to protect the ability of existing businesses to operate or expand by preventing the incremental development of vulnerable uses in the locality.

In terms of the Policies of the adopted Bridgend Replacement Plan 2024, the site is allocated for employment purposes under Policy ENT1. Uses falling within Classes B1, B2 and B8 as defined in the Schedule to the Use Classes Order 1987 (as amended) will be permitted.

Policies SP3 and DNP9 provide the Policy basis for assessing applications for hazardous substance consent. 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 any identified risk to public health or safety.

The Policy also states that:

*‘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 is 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.’*

Relevant statutory consultees have been consulted on this application, none of whom have registered any objections to the proposal. Of particular significance are the comments of the Health & Safety Executive (HSE). Residents and businesses have submitted detailed objections some of which have been shared with HSE. They maintain however that the risks to the surrounding population arising from the proposed operation is so small that there are no significant reasons, on safety grounds, for refusing Hazardous Substances. The requirements of Policies SP3 and DNP9 are addressed by the application.

In response to the application, HSE have produced a map that shows three risk zones around the application site, (see map in the Consultation Responses section of this report). The zones (sometimes referred to as 'contours') show levels of risk or harm that people would face. If the Council grant consent, the map is used to show the areas within which HSE must be consulted for any relevant future planning applications.

Information on the website of HSE confirms that the consultation distance (CD) is based on the maximum quantity of hazardous substance(s) that the site is entitled to have under a consent. The Development Management Procedure Orders requires Councils to consult HSE about certain developments (essentially those that would result in an increase in population) within any CD. HSE will then advise on the nature and severity of the risks presented by the installation to people in the surrounding area so that those risks are given due weight before a decision is made. Taking account of the risks, HSE will then advise against any future development or simply note that it does not advise against it.

In the future when HSE are consulted on any applications within the CD, they will firstly identify which of the three defined zones the development is in. Secondly, the proposed development is classified into one of four "Sensitivity Levels." The main factors that determine these levels are the numbers of persons at the development, their sensitivity (vulnerable populations such as children, old people) and the intensity of the development. With these two factors known, a simple decision matrix is used to give a clear 'Advise Against' (AA) or 'Do not Advise Against' (DAA) response to the PA, as shown below:

<b>Level of Sensitivity</b>	<b>Development in the Inner Zone</b>	<b>Development in the Middle Zone</b>	<b>Development in the Outer Zone</b>
Sensitivity <b>Level 1</b> - Example: Factories	DAA	DAA	DAA
Sensitivity <b>Level 2</b> - Example: Houses	AA	DAA	DAA

Sensitivity <b>Level 3</b> - Example: Vulnerable members of society e.g. primary schools, old people's homes	AA	AA	DAA
Sensitivity <b>Level 4</b> - Example: Football ground/Large hospital	AA	AA	AA

The consequences of a consultation zone being imposed around the application site must be assessed as to whether the storage of a hazardous substance on this site and the requirement to potentially limit development will prevent the Council implementing Policies in the recently adopted plan.

Based on the CD plan submitted by HSE, the following can be deduced:

The '**Inner Zone**' covers the application site, the grounds of a number of businesses on Atlee Street and Squire Drive on Brynmenyn Industrial Estate, undeveloped land but allocated for employment purposes to the west and south. It will also include part of the A4065 and the house and grounds of a property on Rowans Lane. Based on the matrix above, HSE would 'Advise Against' development such as housing, schools, nursing homes, large hospitals and stadia within the 'Inner Zone'. The only exception is developments of 1 or 2 dwelling units where there is a limited number of people at risk. HSE have however indicated that they may 'Advise Against' large industrial development (> 100 employees in one building or buildings > 3 storeys) in the inner zone.

As much of the 'inner zone' covers the site of the proposed Hydrogen Production Facility, the remaining land is limited in size and is unlikely to accommodate any further significant development. The zone should therefore not prejudice the implementation of the policies of the adopted plan.

The '**Middle Zone**' includes more businesses on Brynmenyn Industrial Estate, areas of undeveloped land to the west and the south and more housing (existing) to the east. Again, based on the matrix, HSE would 'Advise Against' schools, nursing homes, large hospitals, and stadia within the 'Middle Zone.' There are no proposals for such uses within the development plan and there are no applications before the Council for such developments. Any future applications may however be reviewed by HSE because of their location in the CD.

The '**Outer Zone**' captures more of the industrial estate and additional housing areas to the south, east and north of the site. In this zone, HSE 'Advise Against' proposal for nurseries, crèches, schools for children up to school leaving age, hospitals, convalescent homes, nursing homes, old people's homes, sheltered housing, boarding schools etc. Again, there are no such facilities existing or proposed within this zone.

Overall, the establishment of a consultation distance around the site should not prejudice the implementation or conflict with the allocating policies of the adopted Bridgend Replacement Local Development Plan 2024.

## CONCLUSION

Notwithstanding the significant public opposition to this application, based on the professional advice received from the HSE, it is considered that there are no unacceptable risks to the environment or public safety associated with this application.

The standards required in the regulations are being met. The HSE and NRW have been consulted and have considered this application. HSE has provided an assessment of the risk of harm from the maximum quantity of hazardous substances for which consent is being sought and concluded that the risks to the surrounding population arising from the proposed operation are such that there are no significant reasons, on safety grounds, for refusing Hazardous Substances Consent.

There are no other material planning considerations which would justify anything other than an approval for the Hazardous Substances Consent in this case.

**RECOMMENDATION:** That **HAZARDOUS SUBSTANCE CONSENT** be **GRANTED** subject to the following condition:

1.	The hazardous substance shall not be kept or used other than in accordance with the application particulars provided on the application form, nor outside the areas marked for storage of the substance(s) on the plan(s) which formed part of the application P/24/788/HAZ.  Reason: In the interests of safety and to ensure compliance with Policies SP3 and DNP9 of the Replacement Bridgend Local Development Plan (2024)
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**JANINE NIGHTINGALE**  
**CORPORATE DIRECTOR COMMUNITIES**

### Background Papers

None