Cyfoeth Naturiol Cymru
Natural Resources Wales

Natural Resources Wales permitting decisions

Hydrogen production: Electrolysis of water

Hyppo Hydrogen Solutions Ltd (Bay Studios Hydrogen Production Facility)

Natural Resources Wales permitting decisions

Hydrogen production permit using electrolysis of water

This is a new low impact hydrogen production permit. The permit regulates the production of hydrogen by electrolysis of water using a polymer electrolyte membrane

We have decided to grant the permit for Bay Studios Hydrogen Production Facility operated by Hyppo Hydrogen Solutions Ltd.

The permit number is: EPR/DB3591ZS

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account.

Unless the decision document specifies otherwise, we have accepted the applicant's proposals.

Structure of this document

- Key Issues of the Decision
- Annex 1 the decision checklist
- Annex 2 the web publicising responses

Key issues of the decision

Meeting the low impact hydrogen production criteria

The application is for a new low impact hydrogen production permit. In issuing the permit we have confirmed the operator can meet the low impact criteria specified below and in the application form.

1) Hydrogen will be produced via Polymer Electrolyte Membrane (PEM).
2) The electricity will be supplied from renewable sources or the National Grid.

3) The operator will not abstract more than 20m^3 of surface water per day for use in the process.
4) All wastewater produced as part of the process is tankered off site.
5) The Operator will not produce more than 1 tonne of non-hazardous or 10 kg of hazardous waste a day.
6) The Operator will not store more than 1 tonne of hydrogen at any one time.

In meeting the low impact criteria, we consider the regulated facility has minimal risk to the environment.

The low impact criteria have been developed based on our low impact hydrogen production criteria risk assessment which is available on our website here.

Consultation

The quick permitting process was consulted on during the design phase. Each minded to decision and draft permit will be consulted on by posting the decision document and permit on our website.

We have carried out consultation on our draft decision. This consultation began on 04/06/2025 and ended on 18/06/2025. No consultation responses were received.

Site condition report

The production of Hydrogen through electrolysis will not result in the release of any polluting substances. We are satisfied that permit condition 3.2.3 will be sufficiently protective. The Operator has confirmed that the land upon which the installation is situated is a brown field site originally built as a Ford factory in the 1950s for car axle and transmission production. The factory building was demolished in the early 2000s,but the concrete floor remains in place. The surfacing of the land underlying the installation is described as generally in good condition, with small patches of top tarmac remaining along with replacement sections for previous pipework and metal work. More recently, the land has been used as a hardstanding car park for film production. The land is described as impermeable to water and the operator has attached photos of the site taken on 14th March 2025, as supporting evidence. The Operator's above description and photographs will form the site baseline going forward.

Biodiversity, Heritage, Landscape and Nature Conservation

This type of installation is not considered to present a risk of pollution to biodiversity, landscape or nature conservation.

The proposed installation itself will not be constructed within the boundaries of any protected site and any potential for physical impact as a result of this, has been eliminated. We also consider that the proposed installation will not affect the features or conservation management of any nearby sites, species or habitats as the only emissions to air associated with the PEM electrolysis process are oxygen and hydrogen and wastewater from the process will be tankered off site.

In conclusion we have ruled out the possibility of this type of installation having a significant effect on any Special Areas of Conservation, Special Protection Areas and Ramsar Sites. We are also satisfied that the installation is not likely to damage the features of any Sites of Special Scientific Interest and also that significant pollution will not be caused at non-statutory sites (National Nature Reserves, Local Nature Reserves, Local Wildlife Sites and Ancient Woodland).

Environmental Risk Assessment of low impact hydrogen production criteria

Air

The only emissions to air from this type of installation are oxygen and hydrogen. The Hydrogen will only be released in the event of a leak, leak detection is a requirement of the installation, and the process will be shut down in the event of a leak. The installation will be vented to ensure leaked Hydrogen can escape easily.

Oxygen is not considered a pollution risk. The use of the Oxygen produced is beneficial but cannot be guaranteed at the smaller scale. We have included permit condition 4.2.2 to ensure this is reviewed periodically.

Emission limits

There are no significant emissions from the installation, therefore we have decided that no emission limits should be set in the permit.

Water & Sewer

The only emission of water permissible by this type of permit is to public sewer or offsite treatment. All wastewater from the process associated with the installation will

be collected and removed from the Site by tanker. The Operator has confirmed that the installation has no emission points to water or sewer.

Emission limits

As there are no emissions to water or sewer from the installation, we have decided that no emission limits should be set in the permit.

Soil and Groundwater

There will be no point source emissions to soil or groundwater from the installation and its associated operations. We consider that permit condition 3.1.1 will be sufficiently protective.

Odour

We do not consider this type of installation presents a risk of odour. We have included permit conditions 3.3.1 and 3.3.2 to ensure that should odours arise then regulatory control can be applied.

Noise and vibration

We do not expect site operation to give rise to noise pollution, we have included permit conditions 3.4.1 and 3.4.2 to maintain regulatory control should issues arise.

Fugitive emissions

Based upon the permit requirements for procedures to minimise the risk of pollution (e.g. condition 1.1.1), we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise fugitive emissions and to prevent pollution from fugitive emissions.

Monitoring

We have decided that monitoring is not required due to the minimal risk of pollution.

Annex 1: Decision checklist

Aspect	Justification / Detail	Criteria met Yes
Receipt of submission		
Low impact hydrogen production criteria met	The application meets the criteria for the low impact hydrogen production permit identified in the application form.	✓
Advertising		
Responses to web publicising	The responses to web publicising (Annex 2) were taken into account in the decision. The decision was taken in accordance with our guidance. In the case of this application, no responses were received.	✓
Sustainable Management of Natural Resources (SMNR)		
Considerations of SMNR - Compliance with our General Purpose	We are satisfied that this decision is compatible with our general purpose of pursuing the sustainable management of natural resources in relation to Wales and applying the principles of sustainable management of natural resources.	✓
The site		
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility. A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.	✓
Environmental Management System (EMS)	The operator has provided a summary of their EMS which we consider is satisfactory.	✓
Operator competence		
Relevant Convictions	Our Enforcement Database has been checked to ensure that all relevant convictions have been declared. No relevant convictions were found for either the company or its officers. The operator satisfies the criteria in RGN 5 on Operator Competence.	✓
Financial competence	There is no known reason to consider that the operator will not be financially able to comply with the permit. The decision was taken in accordance with RGN 5 on Operator Competence.	✓

ANNEX 2: Consultation Reponses

A) Advertising and Consultation on the Application

The Application has been advertised and consulted upon in accordance with Natural Resources Wales Public Participation Statement. The way in which this has been carried out along with the results of our consultation and how we have taken consultation responses into account in reaching our draft decision is summarised in this Annex. Copies of all consultation responses have been placed on Natural Resources Wales public register.

1) Consultation Responses from Statutory and Non-Statutory Bodies

None received.

2) Consultation Responses from Members of the Public and Community Organisations

None received.

a) Representations from Local MP, Assembly Member (AM), Councillors and Parish / Town / Community Councils

None received.

b) Representations from Community and Other Organisations

None received.

c) Representations from Individual Members of the Public

None received.