Cyfoeth Naturiol Cymru
Natural Resources Wales

Natural Resources Wales permitting decisions

Pembrokeshire County Council, Hydrogen Refueller Decision Document

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New bespoke Low Impact Installation permit

The permit number is:

The applicant /operator is: Pembrokeshire County Council

The Installation is located at: Mackerel Quay, Milford Haven Marina, Milford Haven, Pembrokeshire, SA73 3BH

We are minded to grant the permit for Hydrogen Refueller operated by Pembrokeshire County Council.

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
- justifies the specific conditions in the permit other than those in our generic permit template.

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

Key issues of the decision

Receipt of application

Confidential information

A claim for commercial or industrial confidentiality has been not been made.

Identifying confidential information

We have not identified information provided as part of the application that we consider to be confidential. The decision was taken in accordance with our guidance on commercial confidentiality.

Consultation

The consultation requirements were identified and implemented. The decision was taken in accordance with RGN 6 High Profile Sites, our Public Participation Statement and our Working Together Agreements.

A copy of the Application and all other documents relevant to our determination (see below) are available for the public to view. Anyone wishing to see these documents could arrange for copies to be made.

We sent copies of the Application to the following bodies, which includes those with whom we have “Working Together Agreements”:

- **Pembrokeshire National Park Authority**
- **Pembrokeshire County Council**
- **Port of Milford Haven**
- **Health and Safety Executive**
- **Public Health Wales**

These are bodies whose expertise, democratic accountability and/or local knowledge make it appropriate for us to seek their views directly.

The consultation started on 21/03/2021 and ended on 28/04/2021.
An advert was also placed on our website.

Further details along with a summary of consultation comments and our response to the representations we received can be found in Annex 3. We have taken all relevant representations into consideration in reaching our determination.

Draft Permit Consultation

We are now carrying out on our draft decision. This consultation will begin on 17 May 2021 and end on 15 June 2021.

Operator

We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator.

The facility

The regulated facility is an installation which comprises the following activities listed in Part 2 of Schedule 1 to the Environmental Permitting Regulations and the following directly associated activities.

- Section 4.2 Inorganic Chemicals – Part A(1) (a) Producing inorganic chemicals such as (i) gases. This facility produces Hydrogen.
- Directly Associated Activity - Refuelling Riversea Hydrogen Fuel Cell demonstration vehicle.

Legislation

NRW is satisfied that this decision is compatible with its general purpose of pursuing the sustainable management of natural resources in relation to Wales and applying the principles of sustainable management of natural resources

All applicable European directives have been considered in the determination of the application.

The site

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.

Site condition report

The operator has provided a description of the condition of the site.

The proposed site area and surrounds has been used as a car park since approximately 1991 when the newly developed Milford Haven Marina opened. Therefore minor surface car engine oil contamination is expected.

The site is located at the position of a former ice factory and associated buildings that were demolished between 1988-1990 for the new marina development. Thus there may be low level contaminants associated with any former ice factory industrial site of this nature. No further records exist of any pollution at the time of demolition nor any remedial works undertaken. Port of Milford Haven have commented that they are not aware of any contamination identified in this area.

Beyond what was noted there is no prior evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports at the proposed site.

We consider this description is satisfactory. The decision was taken in accordance with our guidance on site condition reports – guidance and templates (H5).

Biodiversity, Heritage, Landscape and Nature Conservation

The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat .

A full assessment of the application and its potential to affect the Milford Haven Marine SAC and Milford Haven Waterway SSSI has been carried out as part of the permitting process. We consider that the application will not affect the features of the site. Further details are contained in the Habitats Regulations Assessment and Countryside and Rights of Way Act assessments.

Environmental Risk Assessment

We have reviewed the operator's assessment of the environmental risk from the facility. The construction plan risk document is more a health and safety document rather than an environmental risk assessment. However, there are zero emissions to atmosphere and only minimal clean water discharge. Furthermore, operational controls are satisfactory as ATEX zones are eliminated wherever possible, and where not, risk is mitigated via appropriate system control management. FCSL always looks to introduce passive ventilation to prevent any hydrogen build-up and include automated control systems incorporating active sensors and automated system shutdown processes.

We are therefore satisfied that no further risk assessment is required.

Operating techniques

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes.

Industry standards applicable to the project:

The hydrogen refueller will be delivered and maintain by Fuel Cell Systems. There are no IED BAT conclusions available for these activities, however, the applicant are following these protocols:

Corporate Compliance

Fuel Cell Systems Limited (FCSL) is not currently ISO accredited but is considering implementation within the near-term as best practice for the future of the business. With this in mind, FCSL actively adopts business practices that are in line with the ISO guidelines wherever possible. FCSL implements best practice from the following standards where relevant: -

- ISO 9001 - quality management
- ISO/TS 16949—quality management system requirements for automotive-related products suppliers
- ISO/TS 29001 - quality management system requirements for the design, development, production, installation, and service of products for the petroleum, petrochemical, and natural gas industries
- ISO 19880-1 standard for gaseous hydrogen fuelling stations
- ISO 14001 - environmental management
- OHSAS 18001 - occupational health and safety management systems

Industry Compliance

FCSL recognises that there are limited regulations and standards that currently apply to the installation of integrated hydrogen and fuel cell systems. These include (but are not limited to):

- Health and Safety Executive (HSE) papers
- The British Compressed Gas Association (BCGA) guidelines
- The Pressurised Equipment Directive (PED)
- The Transportable Pressurised Equipment Directive (TPED)
- European Commission (EC) standards – CEN/TC 268/WG 5
- Society of Automotive Engineers (SAE) standards and protocols
- The Association for Petroleum and Explosive Administration (APEA) 'Blue Book' addendum

FCSL is a member of the working groups for hydrogen within the BCGA and APEA, and also for the Department for Transport / Office of Low Emission Vehicles. FCSL is an executive member of the 'UK Hydrogen and Fuel Cell Association', 'Hydrogen London' and the 'Hydrogen Hub'. FCSL is also a member of the 'Scottish Hydrogen and Fuel Cell Association', 'Midlands Fuel Cell and Hydrogen Network' and the 'Hydrogen Economy North West' group.

Hydrogen Refuelling Compliance

FCSL has a clear and communicated Health & Safety Policy, and undertakes formal risk assessments for every bespoke installation. ATEX zones are eliminated wherever possible, and where not, risk is mitigated via appropriate system control management. FCSL always looks to introduce passive ventilation to prevent any hydrogen build-up and include automated control systems incorporating active sensors and automated system shutdown processes.

FCSL will be storing Hydrogen as a gas and of the following relevant standards will be complied with:

- The facility must meet SAE J2601 (Fuelling Protocols for Light Duty Gaseous Hydrogen Surface Vehicles) and all other relevant standards.
- The highest quality 'industry-standard' components are to be used including WEH dispensing nozzles certified to PED 2014/68/EU and SAE J2600:2002 (design and testing of Compressed Hydrogen Surface Vehicle (CHSV) fuelling connectors, nozzles, and receptacles).
- The system must use E24-79/PED/TPED compliant hydrogen storage tanks.

- Qualified technicians are to be used for gas pipe and tubework installations
- NICEIC or ECA qualified technicians are used for electrical components.

The provider will implement best practice from the following standards where relevant:

- ISO 9001 - quality management
- ISO/TS 16949—quality management system requirements for automotive-related products suppliers
- ISO/TS 29001 - quality management system requirements for the design, development, production, installation, and service of products for the petroleum, petrochemical, and natural gas industries
- ISO 19880-1 standard for gaseous hydrogen fuelling stations
- ISO 14001 - environmental management
- OHSAS 18001 - occupational health and safety management systems
- Health and Safety Executive (HSE) standards
- The British Compressed Gas Association (BCGA) guidelines, and specifically:
- BGCA Code of Practice 4 Industrial Gas Cylinder Manifolds and Gas Distribution Pipework (excluding Acetylene) Rev 4: 2012
- BGCA Code of Practice 41 The Design, Construction, Maintenance and Operation of Filling Stations Dispensing and Gaseous Fuels Rev 1 2016
- BGCA Code of Practice 44 The Storage of Gas Cylinders 2016.
- The Pressurised Equipment Directive (PED)
- The Transportable Pressurised Equipment Directive (TPED)
- European Commission (EC) standards C -EN/TC 268/WG 5
- Society of Automotive Engineers (SAE) standards and protocols
- The Association for Petroleum and Explosive Administration (APEA) ‘Blue Book’ addendum

Safety distances have been expertly considered in the chosen. The stored hydrogen at this proposed site significantly safely meets the required safety distance

We consider the proposed techniques/emission levels for priorities for control are appropriate techniques for the facility.

The permit conditions

Raw materials

We have not specified limits and controls on the use of raw materials and fuels.

Operator Competence

Environment management system

There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.

Relevant convictions

Our Enforcement Database has been checked to ensure that all relevant convictions have been declared.

No relevant convictions were found.

The operator satisfies the criteria in RGN 5 on Operator Competence.

Financial provision

There is no known reason to consider that the operator will not be financially able to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.

ANNEX 1: 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

Response Received from Milford Haven Port Authority
Brief summary of issues raised: As a partner in the Milford Haven: Energy Kingdom project the Port of Milford Haven is very keen to see this hydrogen demonstration succeed. This is a zero emissions technology installation. As such, the Port of Milford Haven support the issue of this permit. MHPA look forward to hosting this demonstrator as it will showcase the Port and Pembrokeshire as a leader in energy innovation.

Response Received from Pembrokeshire Coast National Park Authority
Brief summary of issues raised: As a partner in the Milford Haven: Energy Kingdom project the Port of Milford Haven is very keen to see this hydrogen demonstration succeed. This is a zero emissions technology installation. As such, the Port of Milford Haven support the issue of this permit. MHPA look forward to hosting this demonstrator as it will showcase the Port and Pembrokeshire as a leader in energy innovation.

Published by:
Natural Resources Wales
Cambria House
29 Newport Road
Cardiff
CF24 0TP

0300 065 3000 (Mon-Fri, 8am - 6pm)

enquiries@naturalresourceswales.gov.uk
www.naturalresourceswales.gov.uk

Response Received from Public Health Wales

Brief summary of issues raised:

Overall Conclusion

We have no ground for objection based upon the public health considerations contained within the application and provided the site is operated in line with current sector guidance. We would however, strongly recommend that the regulator is completely satisfied with the proposed storage and management controls of hydrogen at the site. The risk of explosion and fire through inadequate management could be potentially serious in the event of an emergency.

Public Health Risk Assessment

The applicant has identified the installation as a zero emissions site with no emissions to air, land and water. The nearest receptors have been identified and due to the site being zero emissions, the installation is unlikely to impact on the locale. Leakages of hydrogen gas, which may result in fire and explosion are considered low risk following application of management controls. We recommend that the installation is run according to current FRS and sector guidance for the storage and use of hydrogen1 to ensure all measures within the Environmental Management System (EMS) are up-to-date to prevent emergency situations which could result in breaches in local air quality standards. Public health implications are anticipated to be minimal. An environmental management plan has been submitted and is satisfactory, the applicant should seek external accreditation of the EMS.

Response Received from Pembrokeshire County Council

Brief summary of issues raised: No issues raised

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