

Compliance Assessment Report CAR_NRW0040272

Permit being assessed: CB3195ZB.

For: Installation of a Hydrogen Refueller, held by Pembrokeshire County Council

At: Mackerel Quay, Milford Haven Marina, Milford Haven, SA73 3BH.

Type of assessment carried out: Audit, Reason: Routine.

On 09/08/2022 between 11:00 and 13:00.

Parts of permit assessed: Please see details

NRW Lead Officer: Ieuan Davies, accompanied by Rhodri Morgan.

Report sent to: Steve Keating, Energy & Sustainability Team Manager on 16/08/2022.

1. Summary of our findings (full details in section 4)

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
A1 - Specified by permit	Assessed (A)	
B1 - Infrastructure - Engineering for prevention and control of emissions	Assessed (A)	
D1 - Incident Management - Site security	Assessed (A)	
F2 - Amenity - Noise	Assessed (A)	

Result types are explained in more detail in the 'Important Information' section below.

Total number of non-compliances recorded	Total non-compliance score
0	0

How we use the non-compliance score to calculate your annual fee is explained in the 'Important Information' section below.

2. What action is required?

No action required.

3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecution and/or suspension or revocation of your permit.

At this time, we do not intend to take any further action.

This statement does not stop us from taking additional enforcement action if further relevant information comes to light or offences continue.

4. Details of our assessment

Introduction

Pembrokeshire County Council have embarked on a renewable energy project (Milford Haven: Energy Kingdom (MH:EK)) exploring the role hydrogen could play in a decarbonised energy future. The purpose of the project is to explore the potential in production, use and distribution of financially viable hydrogen within different energy sectors (buildings, industry, power & transport) for the Milford Haven waterway.

One aspect of the project which required an environmental permit (S4.2 A1 (a) Inorganic Chemicals – production of hydrogen) is the construction of a green hydrogen electrolyser and refueller (pictured below) which will produce hydrogen on site as a means to trial and fuel two Riversimple Rasa Hydrogen Fuel Cell Electric Vehicles (HFCEV). Production of the Hydrogen is via electrolysis with hydrogen held securely in gaseous form in gas storage cylinders prior to dispensing into hydrogen vehicles.

An audit of the facility was pre-arranged with Pembrokeshire County Council (Permit Holder/Operator) and Fuel Cell systems (Installation, Commissioning & Maintenance). The Operator provided a presentation providing overview of the MH:EK and the Hydrogen Refueller project and site tour.

Presentation - 8th August 2022

Prior to the arranged site visit to the Hydrogen Refueller at Milford Haven, Steve Keating Energy And Sustainable Development Lead provided NRW Officers an overview of the Milford Haven :Energy Kingdom, the regional picture for renewables/hydrogen, and the future direction of the project.

Site Visit

Fuel Cell Systems are the contractor tasked with Installation, commissioning and ongoing maintenance of the facility and undertake daily remote checks along with monthly, 3 monthly, 6 monthly and annual on-site servicing inspections. The quality of the hydrogen is also verified on an annual basis.

Joe Hender of Fuel Cell Systems provided a tour of the Automated Installation detailing the process. The facility was commissioned and first produced hydrogen on the 9th July 2021. The manufacturing of Hydrogen at the facility is via 2 Enapter 2.1kW electrolyzers which require onsite purifying (Reverse Osmosis) and deionizing of mains water for separating the constituents of H₂O. Electricity power for the facility is via local green energy grid. The two electrolysing units are capable of producing 2kg of Hydrogen per day and in context the Rasa Hydrogen Fuel Cell cars have tank capacity of 1.5 kg and a range of approx. 240 miles.

The oxygen produced by the electrolysing units is vented to air and the hydrogen is compressed and stored in cylinders i.e buffer tanks, storage container or the HyQube Refueller. Emissions from the facility are Hydrogen (storage PRVs and Refueller) and Oxygen (Electrolysers) vents. All vents are released to the atmosphere through an engineered vent system located above the facilities units. Under normal operation, Hydrogen will be briefly vented occasionally via the venting system and would occur for example purging refuelling nozzle post car fill or excess hydrogen post booster.

There are also two water drains one from the electrolyzers and one from the Reverse Osmosis process that will occasionally purge a small amount of pure water in normal operation. The electrolyser modules will periodically have a small purge too (also pure water). The purged water is discharged onto hard standing and evaporates naturally.

The facility has been in consistent use with 53kg of Hydrogen produced up to Feb 2022 utilising 3m³ of mains water and 11MWh of electricity.

To further optimise the process Enapter are currently assessing the prospect of amassing vented oxygen and the possibility of purifying to medical grade.

Noise

Whilst in production there were a number of audible sounds emanating from the facility for example a short release from the Air compressor release valve every 45 minutes or short purge from Hydrogen vent following vehicle refuelling. The nearest receptor to the facility would be approximately 50m to the North and to date the Operator nor Regulator have received any noise complaints.

Returns

The Operator's required to report on a number of parameters being Hydrogen Production, Water and Energy usage annually. The Operator's also required to submit a report on the performance of the activities over the previous year. The report shall include as a minimum, a review of the results of the actual and anticipated operation of the installation against the low impact criteria issued by Natural Resources Wales.

Action: To provide permit required reports by the 31st of January 2023.

Conclusion

This was the first visit to the Hydrogen Refueller, its purpose to familiarise the officers with site operations and establish links with site management. Pembrokeshire County Council are pleased with the project thus far stating it has achieved its aims and more and are now appraising the options of extending the lifecycle of the project.

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

Important information

Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

Assessment results and non-compliance categories (used in section 1):

Assessment result	Description
Assessed (A)	Assessed or assessed in part, no evidence of non-compliance found
Action only (X)	Action only relating to the activity assessment
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description	Score
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property	60
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property	31
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property	4
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property	0.1

How we use assessment scores

The number and severity of non-compliances recorded in a year will affect your annual subsistence fee the following year. A non-compliance factor is added to your site's Operator

Performance Risk Appraisal (OPRA) score when we calculate your fee to reflect the additional resource we use to assess permit compliance.

What are suspended scores?

In line with our guidance, we may suspend scores for up to six months to allow time for remedial action to be taken. Suspended scores will be re-instated if the action is not completed.

Full list of Industry and Waste action criteria (used in section 1 and 2):**A: Permitted activities**

- A1 Specified by permit

B: Infrastructure

- B1 Infrastructure – Engineering for prevention and control of emissions
- B2 Infrastructure – Closure and decommissioning
- B3 Infrastructure – Site drainage engineering (clean and foul)
- B4 Infrastructure – Containment of stored materials
- B5 Infrastructure – Plant and equipment

C: General management

- C1 General management – Staff competency/training
- C2 General management – Management system and operating procedures
- C3 General management – Materials acceptance
- C4 General management – Storage, handling, labelling and segregation

D: Incident management

- D1 Incident management – Site security
- D2 Incident management – Accidents, emergency and incident planning

E: Emissions

- E1 Emissions – Air
- E2 Emissions – Land and groundwater
- E3 Emissions – Surface water
- E4 Emissions – Sewer
- E5 Emissions – Waste

F: Amenity

- F1 Amenity – Odour
- F2 Amenity – Noise
- F3 Amenity – Dust/fibres/particulates and litter
- F4 Amenity – Pests/birds and scavengers
- F5 Amenity – Deposits on road

G: Monitoring and records, maintenance and reporting

- G1 Monitoring and records, maintenance and reporting – Monitoring of emissions and environment
- G2 Monitoring and records, maintenance and reporting – Records of activity, site diary/journal/events
- G3 Monitoring and records, maintenance and reporting – Maintenance records
- G4 Monitoring and records, maintenance and reporting – Reporting and notification to Natural Resources Wales

H: Resources efficiency

- H1 Resource efficiency – Efficient use of raw materials
- H2 Resource efficiency – Energy efficiency

Enforcement response

Any permit condition non-compliance is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

Data protection notice

You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law
- assessing customer service satisfaction and improving our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

Disclosure of information – this report will be available to view on-line

If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within 20 working days to let you know if we agree to your request.

What do I do if I disagree with the report or have a complaint?

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 – 18:00), or email enquiries@naturalresourceswales.gov.uk for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at ask@ombudsman.wales

Welsh Language Standards

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.