Cyfoeth Naturiol Cymru
Natural Resources Wales

# PAN-027129: RWE Generation UK Plc Pembroke Green Hydrogen Project

**Permit application type: substantial variation**

**EPR/DP3333TA (Pembroke Power Station)**

# Permit application queries (08/05/25) – Green Hydrogen Production Facility

| NRW query | NRW priority |
|---|---|
| **Main Supporting Info document:** Please confirm the rated thermal input capacity of the emergency power supply (backup diesel generator) in KWth or MWth. '500KW' has been quoted within the application, however this is not specific enough for duly making and verification of the application fee. | High - required for duly making |
| **Charging tool (variation):** NRW SRoC v1 2023-24 has been submitted with the application. We published NRW SRoC v2 2024-25 in June 2024 to reflect increased permitting charges; this version should be used to calculate the fee. It appears there is an underpayment of £572 (base charge) and £71 (noise assessment) = **£643** total amount outstanding. Payment is required before duly making. | High - required for duly making |
| **Drawings 1 – 3, Main Supporting Info document**: Please confirm the installation boundary, including the extension for the green hydrogen facility and surface water drainage system. This is not shown consistently within the application. Should we consider Drawing 2 as the installation boundary (point 1.2.5 within the main supporting info document)? | High - required for duly making |
| **Charging tool (variation):** Within the 'Variation details' tab / Step 3 – complexity factors, Q4 (COMAH) has been answered 'yes'. Please can you clarify this / explain why the project brings the installation into COMAH regulation? COMAH does not feature elsewhere in the application. | Medium - helpful for duly making |
| **Form C2, Main Supporting Info document:** EMS description and certification not clear within the application. However, rwe-generation-environment – this appears to confirm a certified EMS corresponding to ISO 14001:2015 (see page 5)? | Medium - helpful for duly making |

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|---|---|
| **Form C3, Main Supporting Info document:** Please confirm max. production capacity of the GHPF and express clearly e.g. tonnes/hr, tonnes/day of hydrogen. This should reflect what the plant can produce, considering any downtime e.g. maintenance. Please also confirm if the mode of operation is continuous (steady state) or on a more flexible basis – see published GET guidance section 3.1. | Medium - helpful for duly making |
| **Form C3, Main Supporting Info document:** Directly Associated Activities (DAAs) are inconsistently described within the application. This can be fully addressed during determination, however a consistent list of DAAs serving the GHPF would be helpful, having regard to RGN2 Appendix 2. | Medium - helpful for duly making |
| **Form C3, Main Supporting Info document, Drawing 2, Drawing 5:** Please can you clearly identify all point source emissions to air within the application. This is not clear or consistent at present. Our understanding: Oxygen vents x 2; Hydrogen flare stack; Hydrogen (emergency) vent x 1 | Medium - helpful for duly making |
| **Form C3, Main Supporting Info document, Drawing 5:** With reference to 'HOLDS' on Drawing 5, please clarify the fate of surface water & process water. Are these flows directed back into the existing installation's drainage systems i.e. no new surface water discharge points? | Medium - helpful for duly making |
| **Form C3:** Q5a regarding Environmental Impact Assessment (EIA). Answered 'yes' with 'Appendix tbc'. Please can you supply a link to the published planning decision for your project, which should allow us to check for the necessary EIA information? | Medium - helpful for duly making |

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| **Form C3, Main Supporting Info document:** Table 3c refers to Section 2.4 of the main supporting info document (and the corresponding tables for AEL and PEM electrolyser raw materials). Does 'Usage' and 'Net Storage Capacity' correspond to 'Throughput' and 'Maximum amount (tonnes)' respectively? It would be helpful to present raw materials information in the same format and using the same units as Form C3. | Medium - helpful for duly making |
| **Main Supporting Info document:** We understand that Proton Exchange Membrane (PEM) is the now the favoured electrolyser type for the GHPF. Within the application, cooling options are narrowed down to air cooling or hybrid (wet/dry) cooling. Were these cooling options considered feasible for both PEM *and* Alkaline Water Electrolysis (AEL)? Does the PEM technology choice change anything? | Medium - helpful for duly making |
| **Appendix C (Site Condition Report), Drawing 2:** The SCR, Ground Investigation Report & Preliminary Risk Assessment do not appear to fully cover the requested installation permit boundary extension shown on Drawing 2. The missing section corresponds to part of the surface water drainage system and attenuation pond. Not a barrier to duly making but introduces risk to the applicant e.g. at permit surrender if the SCR + supporting info does not fully cover the installation. | Low (for applicant's awareness/info) |

# Permit application queries (27/05/25) – Green Hydrogen Production Facility

| NRW query | NRW priority |
|---|---|
| **Appendix B (Noise Impact Assessment):** The NIA does not appear to contain a statement of competency for persons involved. Please confirm, with reference to 'required competency and standards' outlined in guidance Noise and vibration management: environmental permits - GOV.UK and Method implementation document (MID) for BS 4142 - GOV.UK | High – required for duly making |
| **Appendix B (Noise Impact Assessment):** The NIA does not appear to confirm 1) verification test results (calibration certificates) & dates for sound monitoring equipment; and 2) field calibration test results. See guidance Method implementation document (MID) for BS 4142 - GOV.UK (5.2 & 6.1) | High – required for duly making |
| **Appendix D (Environmental Risk Assessment):** $NO_x$ emissions from flaring of hydrogen. Please assess the risk from this emission according to the guidance Air emissions risk assessment for your environmental permit - GOV.UK. The source term (concentration, flow, duration) should be provided and used to establish a reasonable 'worst case' process contribution for $NO_X$. An engineering upper estimate of the source term may inform a preliminary screening exercise to determine potential significance – either using H1, or another suitable method – to identify significance of $NO_x$ emissions. Potential for flexibility within this exercise is acknowledged, considering flaring will be of short duration e.g. hourly average PC could be modelled in H1, but account taken for the intermittent operation be made using the 15 minute : 1 hour PC ratio of 1.34 to modify the hourly impact as a first-order estimate. Consider updating Appendix D (ERA) to present this information to NRW. **If initial estimates demonstrate clearly that the impact is insignificant, more detailed work shall not be required.** | High - required for duly making |

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| **Appendix D (Environmental Risk Assessment):** Nearby habitats receptors should be checked (distance to designated sites, daily average EQS for $NO_X$?) and factored into the initial screening exercise for the hydrogen flare. Consider updating ERA to present this information to NRW. | High - required for duly making |
| **Appendix D (Environmental Risk Assessment):** There is a discrepancy between stated distances to nearby SAC and SSSI habitats receptors within Milford Haven, even though boundaries are contiguous on maps. Applicant to verify ERA 2.1.4. Consider updating ERA to present this to NRW. | Medium - helpful for duly making |
| **Appendix D (Environmental Risk Assessment):** Nearest surface water receptor requires clarification - this appears to be closer (on maps) than the stated distance 500m north of installation. Please clarify and ensure ERA accurately identifies nearby surface water receptors. | Medium - helpful for duly making |
| **Main Supporting Info document, Appendix D (Environmental Risk Assessment):** Application suggests 0.39t propane storage for flare's pilot flame. This does not appear to have been considered in the ERA e.g. fire/explosion risk. Please clarify and ensure ERA accurately identifies risks. | Medium - helpful for duly making |
| **Main Supporting Info document, Appendix D (Environmental Risk Assessment):** Minor point of query re on-site storage of compressor oil - will this be stored on site (or not)? Application suggests up to 1 x 205l drum. Expected containment standards are outlined within How to Comply guidance. | Low (for applicant's awareness/info) |
| **Appendix D (Environmental Risk Assessment):** Groundwater is not specifically considered within the submitted ERA. Leaks & spills of polluting liquids are identified with control measures to reduce the risk of pollution. Expected containment standards are outlined within How to Comply guidance. | Low (for applicant's awareness/info) |

**Diolch / Thank you**

**Oes cwestiynau gyda chi / Do you have questions?**