

Air Quality Impact Screening Assessment

Pembroke Power Station, SA71 5SS

Electrolyser Flare and Emergency Diesel Generator (1000 kWe)

1. Introduction

This air quality impact screening assessment has been undertaken for a proposed hydrogen flare and nominal 1000 kWe emergency diesel generator (EDG) to be installed at Pembroke Power Station (SA71 5SS), Pembrokeshire, Wales as part of the Pembroke Green Hydrogen development under EPR Variation Application number PAN-027129.

The generator will be installed for emergency back-up purposes to allow safe shutdown in the event of a loss of grid power, with a testing regime of up to 72 hours per year, whilst the flare is to be used to safely remove hydrogen gas from the electrolyser system during system shut-down and during start-up processes before the gas specification for the off-taker is achieved. These processes are part of standard operations and flaring is considered to be BAT in preference to venting¹. The flare will also be used for emergency shut down of the electrolyser.

The assessment evaluates potential impacts on both nearby designated habitat sites (ecological receptors) and the nearest human health receptors, in accordance with Natural Resources Wales (NRW) air quality permitting guidance² and using parameters appropriate for SCAIL³ Combustion modelling.

RWE Generation UK plc appreciates the Regulator has acknowledged that emissions profiling for electrolysers with hydrogen flares is an emerging field and that availability of information in a suitable format is constrained.

Following discussion with NRW, the SCAIL Combustion model has been used in this assessment for both the MCP and the initial flare emissions impact screening. It is anticipated that detailed design of the flare and selection of the capacity of the EDG, in addition to further operational profile information will become available as the project moves into the FEED phase. In the unlikely event that impacts were in excess of those seen in this assessment, the initial impact assessments can be updated accordingly.

The assessment has been made on the combined impact of both the EDG and the flare operating concurrently as this would be considered to be the worst case operational pattern.

¹<https://www.gov.uk/guidance/hydrogen-production-by-electrolysis-of-water-emerging-techniques>

² NRW SCAIL User Guide for new MCPs between 1-20MW

<https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fcdn.cyfoethnaturiol.cymru%2Fg0abhngu%2Fnrw-scail-user-guide-for-mcp-between-1-and-20-mw-th.docx&wdOrigin=BROWSELINK>

³ [SCAIL - Simple Calculation of Atmospheric Impact Limits](#)

2. Project Emissions Summary

2.1 Emergency Diesel Generator (EDG):

It is anticipated that a nominal 1000kWe emergency diesel (gas oil), single unit will be installed to provide back-up power to the green hydrogen plant. The power will not be used to run the unit for continued production, but only to provide a means for safe shut-down in the event of sudden loss of grid connection.

Data has been sourced for a typical unit of this type. The datasheet is included in Appendix 1 and, whilst this may not be the exact model installed, provides emissions parameters used within the SCAIL Combustion modelling.

EDG Operational Parameters:

- Maximum 72 hours per year (for testing purposes)
- Emergency/back-up use only

EDG Stack Parameters:

- Height: 2.5 m
- Diameter: 0.203 m
- Exhaust gas flow rate: 192.9m³/min (from Appendix A)
- Efflux velocity: 99.3m/s (calculated from exhaust gas flow rate and stack diameter)
- Exit temperature: 465°C (from Appendix A)
- Emission rates – NO_x: 2.16 g/s ; SO₂: 0.18 g/s ; PM₁₀: 0.009 g/s (from Appendix A, see below)

The emission rates have been derived from the (nominal) emission factors provided by the manufacturer in units of g/hp-h (grams per horsepower-hour, see Appendix 1), considering that a generator rated at 1000 kWe is equivalent to 1,341 hp (using 1 kWe = 1.341 hp).

For example, for NO_x, the reported (nominal) emission of 5.80 g/hp-h corresponds to 7,778 g/h (5.80 g/hp-h × 1,341 hp), which is equivalent to 2.16 g/s. Similarly, emission rates of 0.18 g/s for SO₂ and 0.009 g/s for PM₁₀ are obtained⁴.

⁴ These values are consistent with those derived using the emissions (nominal) reported by the manufacturer in mg/Nm³, corrected to 5% oxygen, if an oxygen content of ~11% (not specified by the manufacturer) is assumed.

2.2 Flare:

Two potential operating scenarios have been modelled for the flare.

Scenario 1 is based on predicted operational and contractual hydrogen supply requirements from the nearby industrial off-taker and takes into account downtime predictions for plant technical, low carbon power availability, low carbon power cost and off-taker reasons. Calculations on this business-case basis predicts 50 startup/shutdown cycles per annum. Assuming the worst case duration of these cycles as the transition from production to cold shutdown and then cold start up allows 750 minutes for flaring required per annum (12.5 hours).

Scenario 2 is a very conservative worst case of 203 startup/shutdown cycles per annum, giving 3,045 minutes or 50 hours of flaring annually. This is highly unlikely to occur due to the negative implications for the business case.

Indicative conservative flare design data for use in both scenarios has been sourced in the current absence of detailed design information for the Pembroke Green Hydrogen project.

Flare Stack Parameters:

- Height: 20m
- Diameter: 1.11 m
- Efflux velocity: 0.5m/s
- Exit temperature: 2045°C

Operation:

- Scenario 1 at 12.5 hours per year
- Scenario 2 at 50 hours per year

In the absence of a NO_x emission limit value for hydrogen combustion from flares, the NO_x emissions modelled in this assessment are based on the algorithm for calculation of NO_x emissions from destruction of gaseous streams published by Concawe in Section 14.6.1.1 of their report⁵. This equation is derived from emissions factors published by the United States Environmental Protection agency (USEPA)⁶ and is presented below. The emission rates in Table 2.2 are considered appropriate for the Air Quality Assessment, as they account for both the higher net calorific value (NCV) and the higher NO_x emissions produced by hydrogen combustion compared to other fuels such as natural gas.

⁵ Concawe (2017) Air pollutant emission estimation methods for E-PRTR reporting by refineries. Available at: https://www.concawe.eu/wp-content/uploads/Rpt_17-4.pdf

⁶ USEPA (2015) Emissions estimation protocol for petroleum refineries – Version 3.0. Research Triangle Park NC: US Environmental Protection Agency. [Emissions Estimation Protocol for Petroleum Refineries - Version 3.0 \(pdf\)](#)

$$\text{Mass emitted (kg)} = 0.292 \times M \times \text{NCV}$$

Where:

M = mass of flare gas burnt (in tonnes)

NCV = net calorific value of the flare gas burnt (in MJ/kg)

For both Scenario 1 (likely normal operation) and Scenario 2 (worst-case operation), a NO_x emission rate of 16.8 g/s has been calculated, based on the flaring of 432 kg (M) of hydrogen over a fifteen-minute period, once per day. This calculation uses a net calorific value (NCV) for hydrogen of 120.0 MJ/kg and a plant design nominal production rate of 1,800 kg/hr. The operational profile assumes, conservatively, that 1% of the plant's daily hydrogen production (43,200 kg) is flared in a single 15-minute event.

It is worth noting that emissions occur only during the 15-minute flare interval. While the calculated emission rate of 16.8 g/s refers specifically to this short duration, the NO_x air quality standards (AQS) are based on averaging periods of one hour or longer. As a result, the SCAIL model input was adjusted to use the one-hour averaged NO_x emission rate (4.2 g/s) in place of the 15-minute average (16.8 g/s), ensuring consistency with the relevant AQS averaging periods.

Basis of calculation:

$$1,800\text{kg/hr} \times 24 \text{ hr} = 43,200\text{kg/day}$$

$$1\% = 432\text{kg/day}$$

$$\text{Mass (kgNO}_x) = 0.292 \times 0.432 \times 120$$

$$= 15.14\text{kg/hr}$$

$$= 15,140\text{g/hr}$$

$$= 4.2\text{g/s [1-hour average]} \text{ or } 16.8\text{g/s [15 minutes average]}$$

The SCAIL model run mode was selected as "hybrid" in accordance with NRW SCAIL user guide⁷ for new MCP between 1-20MW and the minimum screening distance from the MCP to designated sites was set at 4km (for both SSSI and European sites) for a MCP burning liquid heavy fuel oil between 2-5MW .

⁷ NRW SCAIL User Guide for new MCPs between 1-20MW

<https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fcdn.cyfoethnaturiol.cymru%2Fg0abhugu%2Fnrw-scail-user-guide-for-mcp-between-1-and-20-mw-th.docx&wdOrigin=BROWSELINK>

Table 2.2 Flare Emission Rates: (Based on standard emission factors and predicted operational data)

Pollutant	Emission Rate (g/s) [1 -hour avg]
NOx Scenarios 1 &2	4.2

3. Habitat (Ecological) Receptors

Seven designated habitat sites were identified as nearest to the flare and generator stacks, within a radius of 4km. The locations are shown in Appendix 4.

Table 3: Habitat Receptor Sites

Site Name	Designation	Distance from Stack (m)
Pembrokeshire Marine / Sir Benfro	SAC	432
Milford Haven Waterway	SSSI	432
Gweunydd Somerton Meadows	SSSI	1823
Limestone Coast of South Wales Marine	SAC	2967
Broomhill Burrows	SSSI	2967
Castlemartin Coast	SPA	3096
Castlemartin Corse	SSSI	3567

Assessment Approach:

- Emission rates, stack parameters, and receptor distances were input into the SCAIL Combustion model as per NRW guidance for the MCP combined with both flare operations scenarios.
- Landranger X,Y coordinates for the Emergency Diesel Generator and the Flare align with the Indicative Site Layout in Appendix 2.

- The SCAIL screening spreadsheet for each scenario is appended in Appendix 3. In each of the two flare scenarios the flare data is labelled MCP2 as these cells cannot be altered.
- The screening considered annual and short-term process contributions relative to habitat critical levels and loads as well as the nearest human health receptor.

Screening Results:

Emergency Diesel Generator and Flare Scenario 1 (12.5 hours operation per annum)

- For the MCP and the flare (scenario 1) at these distances and with a maximum of 72 operating hours (MCP) and 12.5 hours (flare) per year, modelled pollutant concentrations at the SAC and SSSI boundaries are expected to be well below 1% of relevant critical levels/loads for NO_x, SO₂, Nitrogen deposition and Acid deposition annually.
- NRW and UK EA guidance indicate such process contributions are considered insignificant to protected sites.
- Where, on the online SCAIL Combustion model, results showed an exceedance for Nitrogen Deposition and Acid Deposition rates it should be noted that for all pollutants the Process Contribution (PC) from the combined flare and MCP emissions was <0.1%, with the exceedance due to existing background levels being in the region of 127% - 205% of the Predicted Environmental Contribution or Deposition (PEC).
- This is reflected in the screening template results (Appendix 3 scail-results-template MCP with Flare (Scenario 1)) where the elevated background levels for Nitrogen and Acid Deposition can be seen, but screens out at all receptors.
- No significant effect on these designated habitats is anticipated, and detailed dispersion modelling or further Habitats Regulations Assessment is not required.

Emergency Diesel Generator and Flare Scenario 2 (50 hours operation per annum)

- For the MCP and the flare (scenario 2) at these distances and with a maximum of 72 operating hours and 50 hours (flare) per year, modelled pollutant concentrations at the SAC and SSSI boundaries are expected to be well below 1% of relevant critical levels/loads for NO_x, SO₂, Nitrogen deposition and Acid deposition annually.
- NRW and UK EA guidance indicate such process contributions are considered insignificant to protected sites.
- Where, on the online SCAIL Combustion model, results showed an exceedance for Nitrogen Deposition and Acid Deposition rates it should be noted that for all pollutants the Process Contribution (PC) from the combined flare and MCP

emissions was <0.4%, with the exceedance due to existing background levels being in the region of 127% - 205% of the Predicted Environmental Contribution or Deposition (PEC).

- This is reflected in the screening template results (Appendix 3 scail-results-template MCP with Flare (Scenario 2)) where the elevated background levels for Nitrogen and Acid Deposition can be seen, but screens out at all receptors.
- No significant effect on these designated habitats is anticipated, and detailed dispersion modelling or further Habitats Regulations Assessment is not required.

4. Human Health Receptors

The following receptors considered in the screening exercise and are shown in Appendix 5

Site Name	Label	Distance from stack
Pennar Point	R1	1995m
Lambeeth Farm	R2	1579m
Greenhill Farm	R3	366m
Pwllcrochan	R4	471m
Martin's Haven House	R5	429m

Some housing in Goldborough Road, was identified approximately 1200 metres from the generator and flare stack indicated by a purple dot in the drawing shown in Appendix 5. This location was subsequently excluded from assessment in favour of previously approved locations (R1 – R5 above) in other RWE air quality assessments. Note Pwllcrochan and Greenhill Farm are no longer considered as residential receptors.

Assessment Approach:

- The assessment focuses on air quality at the receptors R1-R5.
- Both annual and short-term UK Air Quality Standards (AQS) for NO₂, SO₂, and PM₁₀ were considered.

Screening Results:

- Given the separation distance and the flare and generator's extremely limited annual operations process ground level concentrations at the receptors is extremely low.
- Both long-term and short-term objectives for human health protection will be comfortably met.

- Guidance from NRW and the UK Environment Agency confirms that emergency generators operated for <500 hours/year with such separation distances are not expected to cause a significant risk to local air quality at human receptors.
- No further detailed modelling is warranted.

5. Conclusion

- The hydrogen flare and emergency diesel generator at Pembroke Green Hydrogen (operating ≤ 72 hours/year) will have **insignificant** impact on air quality at both the nearest ecological and human health receptors, including designated habitat sites and receptors R1-R5.
- All regulatory thresholds for both ecological protection and public health will be met.
- No further air quality modelling or assessment is required for this installation.

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10th November 2025

13th November 2025

14th November 2025

Appendices

Appendix 1 Example datasheet for 1000kWe diesel generator

Appendix 2 Indicative site layout

Appendix 3 SCAIL output screening template spreadsheets (MCP with Flare Scenario 1 and MCP with Flare Scenario 2)

Appendix 4 Ecological Receptor locations

Appendix 5 Human Health Receptor locations

Cat® DE1250 GC

Diesel Generator Sets



Image shown might not reflect actual configuration.

Engine	C32
Bore – mm (in)	145 (5.7)
Stroke – mm (in)	162 (6.4)
Displacement – L (in ³)	32.1 (1959)
Compression Ratio	15.0:1
Aspiration	TA
Fuel System	EUI
Governor Type	ADEM™ A4

Model	Standby 50 Hz kVA (ekW)	Emissions Performance
DE1250 GC	1250 (1000)	Optimized for Low Fuel Consumption

Standard Features

Cat® Diesel Engine

- Designed and optimized for low fuel consumption
- Industry-leading mechanical and electrical design
- Industry-leading motor starting capabilities
- High efficiency

Generator Set Package

- Conforms to ISO8528-5 G3 load acceptance requirements
- Reliability is verified through prototype testing, which includes torsional vibration, fuel consumption, oil consumption, transient performance, and endurance testing

Alternators

- Superior motor starting capability minimizes the need for oversizing the generator
- Designed to match the performance and output characteristics of Cat diesel engines

Cooling System

- Cooling systems available to operate in ambient temperatures 50°C @ 0m
- Tested to ensure proper generator set cooling

GCCP Control Panels

- User-friendly set-up and button layout for ease of use
- Multiple parameters are monitored & displayed simultaneously for full visibility
- The module can be configured to suit a wide range of applications for user flexibility

Warranty

- 24 months/1000-hour warranty for standby and mission critical ratings
- Extended service protection is available to provide extended coverage options

Worldwide Product Support

- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- Your local Cat dealer provides extensive post-sale support, including maintenance and repair agreements

Financing

- Caterpillar offers an array of financial products to help you succeed through financial service excellence
- Options include loans, finance lease, operating lease, working capital, and revolving line of credit
- Contact your local Cat dealer for availability in your region

Standard and Optional Equipment

Engine

Air Cleaner

- Single element
- Dual element

Starting

- Standard batteries
- Jacket water heater

Engine Attachments

- Manual Sump Pump
- Fuel Transfer Pump
(With fuel tank base only)
- 6" Exhaust Flexible Fittings
- 6" Exhaust Flange Kits

Alternator

Output voltage

- 400V
- 415V

Temperature Rise (over 40°C ambient)

- 150°C

Winding type

- Random wound

Excitation

- Internal excitation (IE)
- Permanent magnet (PM)

Attachments

- Anti-condensation heater

Power Termination

Type

- Power Terminal Strips
- Circuit breaker
- 2000A
- 3-pole 4-pole
- Manually operated
- Electrically operated

Factory Enclosure

- Sound attenuated

Attachments

- DC lighting package

Fuel Tank

- 1000 L (264 gal)
(With enclosure only)

Control System

Controller

- GCCP 1.3
- GCCP 1.4

Attachments

- Ground Fault Indication

Charging

- Battery charger – 10A

Cat Connect

Connectivity

- Ethernet
- Cellular

Extended Service Options

Terms

- 3 year
- 4 year
- 5 year

Coverage

- Silver
- Gold

Certifications

- CE
- EAC
- UKCA

Note: Some options may not be available on all models. Certifications may not be available with all model configurations. Consult factory for availability.

DE1250 GC Diesel Generator Sets

Electric Power

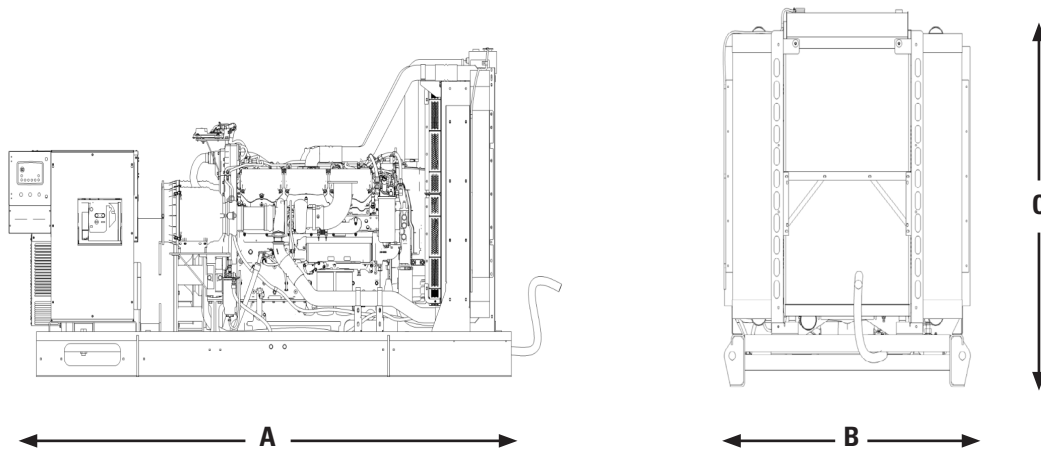


Package Performance – DE1250 GC

Performance	Standby		Mission Critical	
Frequency	50 Hz		50 Hz	
Gen set power rating with fan	1000 ekW		1000 ekW	
Gen set power rating with fan @ 0.8 power factor	1250 kVA		1250 kVA	
Fueling strategy	Low Fuel		Low Fuel	
Performance number	EM0679-00		EM0777-01	
Fuel Consumption				
100% load with fan – L/hr (gal/hr)	252.3	(66.7)	252.3	(66.7)
75% load with fan – L/hr (gal/hr)	185.5	(49.0)	185.5	(49.0)
50% load with fan – L/hr (gal/hr)	128.4	(33.9)	128.4	(33.9)
25% load with fan – L/hr (gal/hr)	75.0	(19.8)	75.0	(19.8)
Cooling System				
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)	0.12	(0.48)
Radiator air flow – m ³ /min (cfm)	925	(32666)	925	(32666)
Engine coolant capacity – L (gal)	55	(14.5)	55	(14.5)
Radiator coolant capacity – L (gal)	49	(12.5)	49	(12.5)
Total coolant capacity – L (gal)	104	(27.5)	104	(27.5)
Inlet Air				
Combustion air inlet flow rate – m ³ /min (cfm)	74.2	(2619.0)	74.2	(2619.0)
Exhaust System				
Exhaust stack gas temperature – °C (°F)	464.6	(868.3)	464.6	(868.3)
Exhaust gas flow rate – m ³ /min (cfm)	192.9	(6812.8)	192.9	(6812.8)
Exhaust system backpressure (maximum allowable) – kPa (in. water)	6.7	(27.0)	6.7	(27.0)
Heat Rejection				
Heat rejection to jacket water – kW (Btu/min)	340	(19353)	340	(19353)
Heat rejection to exhaust (total) – kW (Btu/min)	871	(49555)	871	(49555)
Heat rejection to aftercooler – kW (Btu/min)	241	(13691)	241	(13691)
Heat rejection to atmosphere from engine – kW (Btu/min)	139	(7891)	139	(7891)
Heat rejection from alternator – kW (Btu/min)	52	(2960)	52	(2960)
Emissions* (Nominal)				
NOx mg/Nm ³ (g/hp-h)	2928.1	(5.80)	2928.1	(5.80)
CO mg/Nm ³ (g/hp-h)	229.6	(0.46)	229.6	(0.46)
HC mg/Nm ³ (g/hp-h)	5.7	(0.01)	5.7	(0.01)
PM mg/Nm ³ (g/hp-h)	11.9	(0.03)	11.9	(0.03)
Emissions* (Potential Site Variation)				
NOx mg/Nm ³ (g/hp-h)	3543.0	(7.02)	3543.0	(7.02)
CO mg/Nm ³ (g/hp-h)	429.3	(0.86)	429.3	(0.86)
HC mg/Nm ³ (g/hp-h)	10.7	(0.02)	10.7	(0.02)
PM mg/Nm ³ (g/hp-h)	23.2	(0.05)	23.2	(0.05)

*mg/Nm³ levels are corrected to 5% O₂. Contact your local Cat dealer for further information.

Weights and Dimensions



Model	Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Wet Weight kg (lb)
DE1250 GC	4175 (164.3)	1856 (73.1)	2217.5 (87.3)	7079 (15606)

Note: For reference only. Do not use for installation design. Contact your local Cat dealer for precise weights and dimensions.

Ratings and Definitions

Standby

Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Mission Critical

Output available with varying load for the duration of the interruption of the normal source power. Average power output is 85% of the mission critical power rating. Typical peak demand up to 100% of rated power for up to 5% of the operating time. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Applicable Codes and Standards

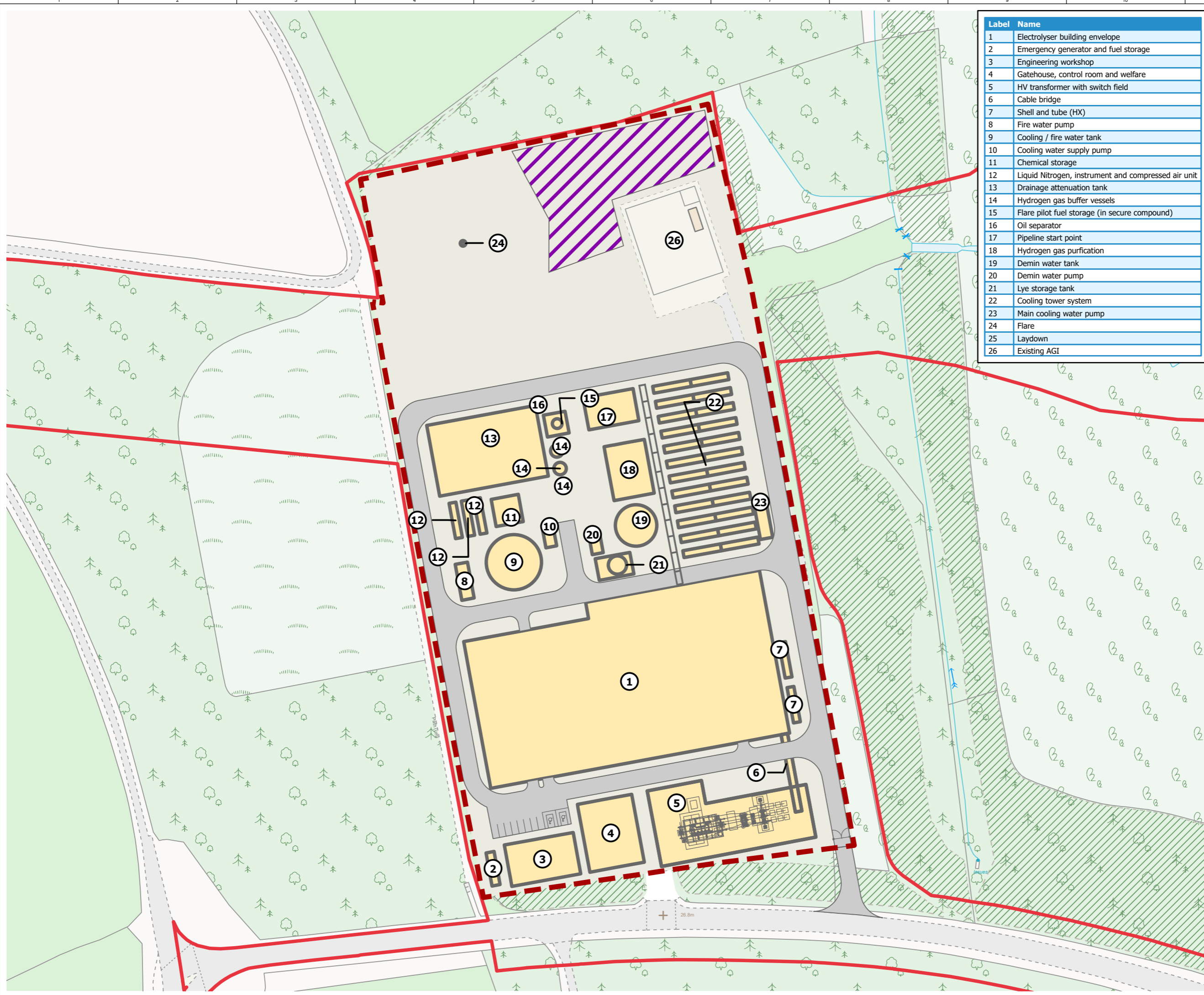
AS1359, IEC 60034-1, ISO 3046, ISO 8528, 2014/35/EU, 2006/42/EC, 2014/30/EU, 2008 No. 1597, 2016 No. 1091, 2016 No. 1101 and 2001 No. 1701 amended by 2005 No. 3525

Note: Codes may not be available in all model configurations. Please consult your local Cat dealer for availability.

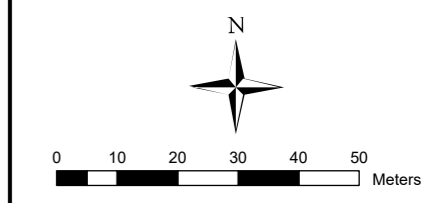
Fuel Rates

Fuel rates are based on fuel oil of 35° API [16°C (60°F)] gravity having an LHV of 42,780 kJ/kg (18,390 Btu/lb) when used at 29°C (85°F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.)

LET'S DO THE WORK.™



Label	Name
1	Electrolyser building envelope
2	Emergency generator and fuel storage
3	Engineering workshop
4	Gatehouse, control room and welfare
5	HV transformer with switch field
6	Cable bridge
7	Shell and tube (HX)
8	Fire water pump
9	Cooling / fire water tank
10	Cooling water supply pump
11	Chemical storage
12	Liquid Nitrogen, instrument and compressed air unit
13	Drainage attenuation tank
14	Hydrogen gas buffer vessels
15	Flare pilot fuel storage (in secure compound)
16	Oil separator
17	Pipeline start point
18	Hydrogen gas purification
19	Demin water tank
20	Demin water pump
21	Lye storage tank
22	Cooling tower system
23	Main cooling water pump
24	Flare
25	Laydown
26	Existing AGI



Key:

- Indicative application site boundary (23.7ha)
- Indicative laydown areas
- Security fence
- Building and plant
- Access road and parking

MJA	CM	17/04/24	CM	A
Drawn	Checked	Date	Approved	Rev.

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RWE
 Geospatial Graphics
 RWE Generation UK plc
 Windmill Hill Business Park
 Swindon
 SN5 6PB
 01793 877777

Size of original	Scale of original
A3	1:1,250

PNZC
 RWE's Pembroke Net Zero Centre
 Innovating for decarbonisation
 in South Wales

Title
RWE PEMBROKE GREEN HYDROGEN, A PEMBROKE NET ZERO CENTRE PROJECT
INDICATIVE SITE LAYOUT PLAN

Status
APPROVED

Drawing Number
RWE/PMBRK/ENV/0031/A

SCAIL Combustion MCP Information

MCP Site (Installation) Location	
Address	Pembroke Power Station
Postcode	SA71 5SS
MCP (installation) grid reference x coordinate	192503
MCP (installation) grid reference y coordinate	202513

Key

	Cells to be populated by user
	Locked cells



MCP (Stack) Information		MCP 1	MCP 2	MCP 3	MCP 4	MCP 5	MCP 6	MCP 7	MCP 8
MCP name/identifier									
Rated thermal input in megawatts	MWth	2.8	n/a						
Stack grid reference X coordinate	m	192472	192461						
Stack grid reference Y coordinate	m	202353	202579						
Actual stack height	m	2.5	20						
Calculated effective release height (if necessary)	m								
Actual stack diameter	m	0.2	1.11						
Actual exit temperature	C	465	2045						
Actual exit velocity	m/s	99.3	0.5						
Impeded or horizontal release	Yes/No	No	No						
Calculated effective stack diameter (only required for impeded or horizontal release)	m								
Volumetric flow rate normalised to the ELV reference conditions	m3/s	3.23							
Actual oxygen content	%	11							
Actual moisture content	%	50							
NOx Emission Limit Value (ELV)	mg/m3	2928							
SO2 Emission Limit Value (ELV)	mg/m3	68							
PM10 Emission Limit Value (ELV)	mg/m3	12							
NOx pollutant emission rate	g/s	2.16	4.2						
SO2 pollutant emission rate	g/s	0.18							
PM10 pollutant emission rate	g/s	0.009							
How the MCP operates	Continuous/Intermittent	Intermittent	Intermittent						
Maximum operating hours	Hours	72	13						

Nearby building structures									
Building grid reference X coordinate	m	192508	192508						
Building grid reference y coordinate	m	202482	202482						
Height	m	17m	17m						
Greatest building width	m	60	60						

SCAIL Combustion MCP Information

MCP Site (Installation) Location	
Address	Pembroke Power Station
Postcode	SA71 5SS
MCP (installation) grid reference x coordinate	192503
MCP (installation) grid reference y coordinate	202513

Key

	Cells to be populated by user
	Locked cells



MCP (Stack) Information		MCP 1	MCP 2	MCP 3	MCP 4	MCP 5	MCP 6	MCP 7	MCP 8
MCP name/identifier									
Rated thermal input in megawatts	MWth	2.8	n/a						
Stack grid reference X coordinate	m	192472	192461						
Stack grid reference Y coordinate	m	202353	202579						
Actual stack height	m	2.5	20						
Calculated effective release height (if necessary)	m								
Actual stack diameter	m	0.2	1.11						
Actual exit temperature	C	465	2045						
Actual exit velocity	m/s	99.3	0.5						
Impeded or horizontal release	Yes/No	No	No						
Calculated effective stack diameter (only required for impeded or horizontal release)	m								
Volumetric flow rate normalised to the ELV reference conditions	m3/s	3.23							
Actual oxygen content	%	11							
Actual moisture content	%	50							
NOx Emission Limit Value (ELV)	mg/m3	2928							
SO2 Emission Limit Value (ELV)	mg/m3	68.3							
PM10 Emission Limit Value (ELV)	mg/m3	11.9							
NOx pollutant emission rate	g/s	2.16	4.2						
SO2 pollutant emission rate	g/s	0.18							
PM10 pollutant emission rate	g/s	0.009							
How the MCP operates	Continuous/Intermittent	Intermittent	Intermittent						
Maximum operating hours	Hours	72	50						

Nearby building structures									
Building grid reference X coordinate	m	192508	192508						
Building grid reference y coordinate	m	202482	202482						
Height	m	17m	17m						
Greatest building width	m	60	60						

SCAIL Habitats Results	Habitat 1	Habitat 2	Habitat 3	Habitat 4	Habitat 5	Habitat 6	Habitat 7	Habitat 8	Habitat 9	Habitat 10
	Screens Out	Screens Out	Screens Out	Screens Out	Screens Out	Screens Out	Screens Out	Screens Out	Screens Out	Screens Out

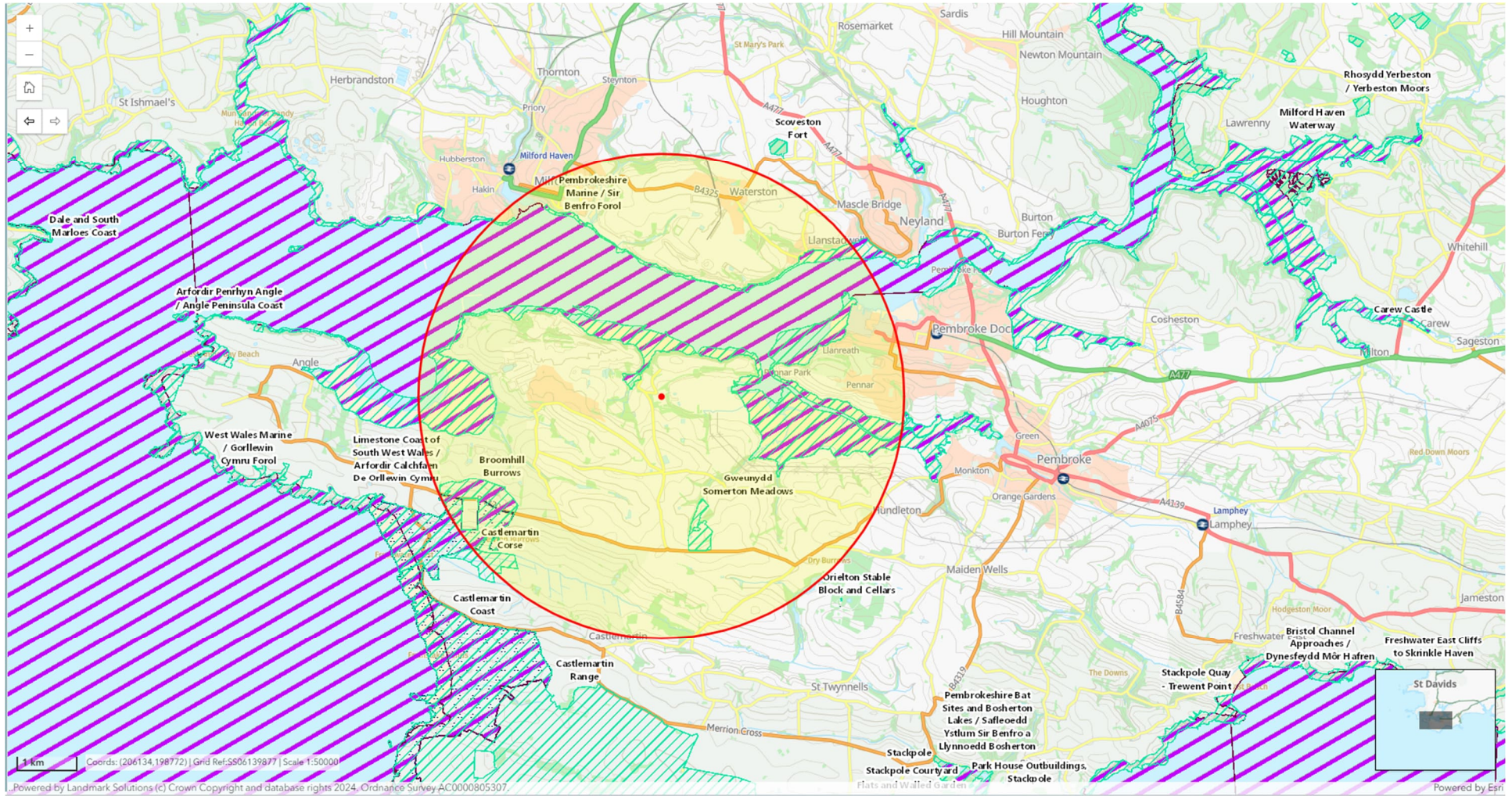
SCAIL Human Receptor Results	Human Receptor 1	Human Receptor 2	Human Receptor 3	Human Receptor 4	Human Receptor 5	Human Receptor 6	Human Receptor 7	Human Receptor 8	Human Receptor 9	Human Receptor 10
	Screens Out	Screens Out	Screens Out	Screens Out	Screens Out	Screens Out	Screens Out	Screens Out	Screens Out	Screens Out

Final Screening Assessment	Screens Out
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Appendix 4

Habitat Receptors



Appendix 5

Human Health Receptors

