Conrad (Caernarfon) Limited Decision Document

New bespoke Permit

The application number is: **PAN-012222**

The Applicant / Operator is: **Conrad (Caernarfon) Limited**

The Facility is located at: **Conrad (Caernarfon), Ystad Ddiwydiannol, Griffiths Crossing, Llanfair Is Gaer, Caernarfon, LL55 1TS**

We have decided to grant the permit for Conrad (Caernarfon) Limited.

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

Structure of this document

- Table of contents
- Key issues

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Key issues of the decision

1 Our decision

We have decided to issue a permit to Conrad (Caernarfon) Limited.

We consider that, in reaching that decision, we have taken into account all relevant considerations and legal requirements and that the permit will ensure that a high level of protection is provided for the environment and human health.

This Application is to operate a regulated facility for a maximum of 3750 hours per year which is subject to principally to the Environmental Permitting Regulations 2016 (EPR), Medium Combustion Plant Directive (MCPD) and Specified Generator (SG) regulations.

The permit contains many conditions taken from our standard Environmental Permit template including the relevant Annexes. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations (EPR) and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the permit, we have considered the Application and accepted the details are sufficient and satisfactory to make the standard conditions appropriate.

This document should be read in conjunction with the application and supporting information and permit.

2 How we reached our decision

2.1 Receipt of Application

The Application was accepted as duly made on **20/04/2021.** This means we considered it was in the correct form and contained sufficient information for us to begin our determination, but not that it necessarily contained all the information we would need to complete that determination.

The Applicant made **no claim for commercial confidentiality**. We have not received information in relation to the Application that appears to be confidential in relation to any party.

2.2 Consultation on the Application

There was no requirement to carry out a consultation on the Application, the plant is not located within an AQMA.

2.3 Requests for Further Information

A Schedule 5 notice was used to requested further information from the applicant, requesting an amendment to the submitted air dispersion modelling assessment in terms of the impact assessment on habitats sites. The Schedule 5 notice was sent on 23/04/21, the applicants response to the Schedule 5 notice was provided on the 27/04/21 and the information supplied satisfied the requirement of the Schedule 5 notice issued.
A copy of the information notice and e-mails requesting further information were placed on our public register as were the responses when received.

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3 The Legal Framework

The permit will be issued, under Regulation **13** of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- plant as described by Schedule 25A and Schedule 25B covering the Medium Combustion Plant Directive (MCPD) and Specified Generator (SG) regulations respectively;
- subject to aspects of the Well-Being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016 which also have to be addressed.

We address the legal requirements directly where relevant in the body of this document. NRW is satisfied that this decision is consistent with its general purpose of pursuing the sustainable management of natural resources (SMNR) in relation to Wales and applying the principles of SMNR. In particular, NRW acknowledges that it is a principle of sustainable management to take action to prevent significant damage to ecosystems. We consider that, in granting the Permit a high level of protection will be delivered for the environment and human health through the operation of the Facility in accordance with the permit conditions. 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.

4 The Facility

4.1 Description of the Facility and related issues

4.1.1 The permitted activities

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The Facility is subject to the EPR because it carries out an activity as described in Schedule 25A and Schedule 25B of the EPR:

- One combined Tranche B Specified Generator/new Medium Combustion Plant aggregated to <50MWth at a specified location

A Generator means any combustion plant generating electricity. The regulations use the term 'specified generator' to encompass both individual generators and multiple generators at the same location or site, operated by the same Operator and for the same purpose. The "same purpose" means that having a different function does not stop individual generators being treated as part of a specified generator, e.g. generators with a capacity market agreement or providing a balancing service whether they are under the same contract or not would be classed as operating for the "same purpose" as they generate electricity. Similarly, generators with different fuels or technologies are also classed as operating for the "same purpose".

The specified generator permit will apply to the site, rather than its constituent individual generators. All specified generators equal to or more than 1 MWth will also be Medium Combustion Plant (MCP) and must also meet the requirements of the MCP Directive, the specified generator is also a new MCP as put into operation after 20 December 2018, therefore the MCPD requirements apply now..

Specified Generators are also divided into Tranche A and Tranche B sites, which will determine the relevant permitting date. A site is a Tranche A site if it meets the following criteria:

• It came into operation before 1 December 2016, or

• It is the subject of a capacity agreement arising from the 2014 or 2015 capacity auctions

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A generator with a rated thermal input of less than 1MWth will be classed as Tranche A if:

• It is the subject of a capacity agreement arising from the 2014, 2015 or 2016 capacity auctions, or

• A FiT preliminary accreditation application was received by OfGEM before 1 December 2017, or

• Is the subject of an agreement to provide balancing services entered into before 31 October 2017.

Tranche B generators are all those that are not Tranche A.

Conrad (Caernarfon) Limited operate two 5.965 MWth natural gas-fired engines (one 11.93 MWth Specified Generator) which are used for the purposes of electricity generation. The facility at Conrad (Caernarfon) Ltd is classified as a Tranche B Specified Generator and a new MCP.

4.1.2 The Site

Conrad (Caernarfon) Limited is a small 11.93 MWth natural gas fired power station located at Ystad Ddiwydiannol Griffiths Crossing, Llanfair Is Gaer, Caernarfon, LL55 1TS. No activities other than the generation of electricity from natural gas will take place on site.

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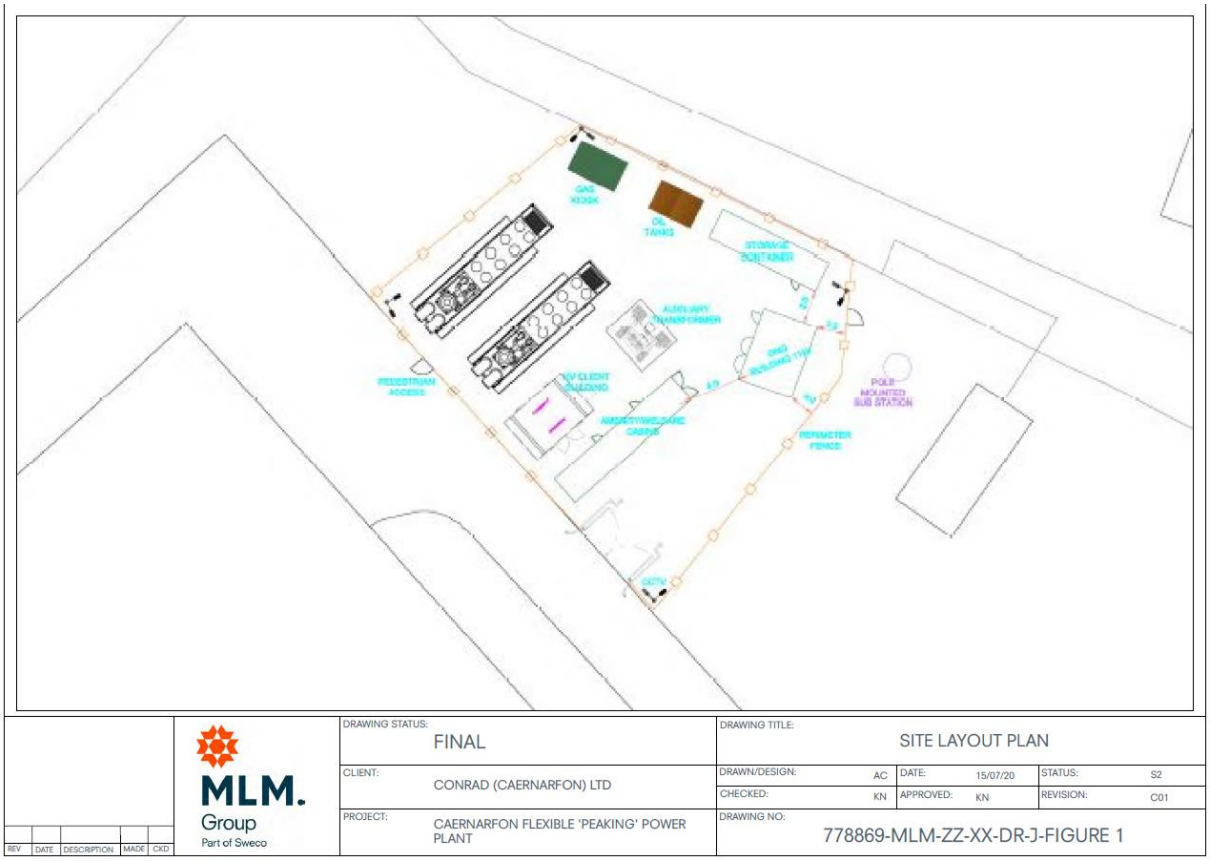

4.1.3 What the Facility does

The flexible power plant itself is made up of 2 natural gas-fired engines. The engines used are MTU 20V4000L64FN -11KV.

The plant is designed to operate intermittently at short notice on short durations runs. The plant has been designed as a flexible power generation facility providing electricity to the grid during times of low renewable energy output, high winter demand, market scarcity, system constraints and system instability.

As a peaking plant, the facility is permitted to operate up to a maximum of 3,750 hours per year.

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4.1.4 Key Issues in the Determination

The key environmental and human health issues considered during the determination of this variation were:

- **Air quality – Oxides of Nitrogen**
- **Air quality – Carbon monoxide**

This will be discussed separately in this decision document.

4.2 Operation of the Facility – general issues

4.2.1 Administrative issues

The Applicant is the sole Operator of the Facility. We are satisfied that the Applicant is the person who will have control over the operation of the Facility if the Permit were to be granted; and that the Applicant will be able to operate the Facility so as to comply with the conditions included in the permit.

4.2.2 Management

The Applicant has stated in the Application that they will implement an Environmental Management System (EMS) that will meet the requirements for an EMS in our "How to comply with your environmental permit guidance". The Applicant submitted a summary of the EMS with their application.

We are satisfied that appropriate management systems and management structures will be in place for this Facility, and that sufficient resources are available to the Operator to ensure compliance with all the Permit conditions.

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4.2.3 Operating techniques

The operator has stated that they will implement the following operating techniques in line with the relevant technical guidance as described in ‘How to comply’ NRW Medium Combustion Plant and Specified Generator Guidance.

Monitoring of point source emisisons to air will be carried out in line with the monitoring requirements contained within TGN M5 and will have MCERTS accreditation.

We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process.

5 Minimising the Facility’s environmental impact

For this kind of regulated activity, the principal emissions are emissions to air. There are no permit conditions for water, land, energy efficiency, or noise and BAT does not apply.

The next sections of this document explain how we have approached the critical issue of assessing the likely impact of air emissions from the MCP/SG on human health and the environment and what measures we are requiring to ensure a high level of protection.

We have reviewed the operator's assessment of the environmental risk from the facility. The operator’s risk assessment is satisfactory. The assessment shows that, applying the conservative criteria in our guidance on Environmental Risk Assessment, all emissions may be categorised as environmentally insignificant.

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We will discuss the operators risk assessment in more detail as follows:

5.1 Assessment of Impact on Air Quality

This section of the decision document deals primarily with the dispersion modelling of emissions to air from the stacks and its impact on local air quality.

The Applicant has assessed the Facility's potential emissions to air against the relevant air quality standards, and the potential impact upon human health. These assessments predict the potential effects on local air quality from the Facility's stacks emission.

The air impact assessments, and the dispersion modelling has been based on the Facility (peaking plant) operating up to 3750 hours per year at the relevant long-term or short-term emission limit values, i.e. the maximum permitted emission rate.

The air impact assessment included the assessment of the short-term and long-term emissions against the relavant critical level of the following pollutants: NOx. An assumption that 35 % NOx to NO_2 conversion for the short term assessment and 70 % for the long term assessment has been made, this is in accordance with current NRW guidance.

We are in agreement with this approach. The assumptions underpinning the model have been checked and are reasonably precautionary. The way in which the Applicant used dispersion models, its selection of input data, use of background data and the assumptions it made have been reviewed to establish the robustness of the Applicant's air impact assessment. The output from the model has then been used to inform further assessment of health impacts.

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Annual Oxides of Nitrogen (NOx) emissions

The applicant has modelled process contributions (PC) and predicted environmental concentrations (PEC) at a number of sensitive receptor locations. The maximum annual PC at any modelled sensitive receptor is 1.73 % of the Ambient Air Directive (AAD) Limit Value for annual mean NO_2 concentrations (40 µg m^{-3}), therefore in accordance with NRW guidance it could not be screened out at this stage. The maximum annual PEC at any modelled sensitive receptor is 13.43 % of the AAD Limit Value for annual mean NO_2 concentrations (40 µg m^{-3}), therefore in accordance with NRW guidance it could be screened out as insignificant at this stage as the value is <70 % of the AAD. The maximum PEC (5.37 µg m^{-3}) leaves ample headroom within the AAD Limit Value and is unlikely to lead to an exceedance of the AAD Limit Value and can be deemed insignificant.

1-Hour Oxides of Nitrogen (NOx) emissions

The applicant has modelled process contributions (PC) and predicted environmental concentrations (PEC) at a number of sensitive receptor locations. The maximum hourly PC at any modelled receptor is 10.11 % of the Ambient Air Directive (AAD) Limit Value for hourly mean NO_2 concentrations (200 µg m^{-3}), therefore in accordance with NRW guidance it could not be NRW guidance it could not be screened out at this stage. The maximum hourly PEC at any modelled sensitive receptor is 14.79 % of the AAD Limit Value for hourly mean NO_2 concentrations (200 µg m^{-3}), therefore in accordance with NRW guidance it could be screened out as insignificant at this stage as the value is <20 % of the AAD. The maximum PEC (29.58 µg m^{-3}) leaves ample headroom within the AAD Limit Value and is unlikely to lead to an exceedance of the AAD Limit Value and can be deemed insignificant.

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The results indicate that all receptor locations within the study area there is unlikely to be an exceedance of the relevant air quality standards for annual and hourly NO_2 concentrations and can be considered insignificant in line with NRW guidance.

Carbon monoxide

The applicant has modelled process contributions (PC) and predicted environmental concentrations (PEC) at a number of sensitive receptor locations. The maximum 8-hourly PC at any modelled receptor is 2.5 % of the Ambient Air Directive (AAD) Limit Value for 8-hourly mean NO_2 concentrations (10,000 µg m^{-3}), therefore in accordance with NRW guidance it could be screened out as insignificant at this stage.

The results indicate that all receptor locations within the study area there is unlikely to be an exceedance of the relevant air quality standards for 8- hourly CO concentrations and can be considered insignificant in line with NRW guidance.

5.2 Impact on Habitats sites and SSSIs

There are no SSSIs located within 2 km of the site and thus no further assessment was required.

5.3 European Sites

One Natura 2000 site is located within 5 km of the site (relevant screening distance used). Menai Strait & Conwy Bay / Y Fenai a Bae Conwy (SAC - UK0030202) is situated approximately 260 m away from the proposed site.

A OGN200 Form 1 has been completed with regards to a Habitats Regulations Assessment (HRA). This is required because there is a conceivable impact pathway to the SAC. The HRA is available to view on the public register a summary of the conclusions given herein. The project was screened in for likely significant effect as

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there is an impact pathway. It was concluded that the project will not adversely affect the integrity of any Natura 2000 site either alone or in-combination.

6 Setting ELVs and other Permit conditions

We have decided that emission limits should be set for the parameters listed in the permit. Emissions Limit Values (ELVs) are in line with those set out in Schedule 25 A and Shedule 25B of EPR.

6.1 Monitoring

We have decided that monitoring should be carried out for the parameters listed in Schedule 3 of the permit using the methods and to the frequencies specified in those tables. These monitoring requirements have been imposed in order to demonstrate compliance with the emissions limits in the permit, as per the ELV and monitoring frequency requirements specified within the EPR Schedule 25A and Schedule 25B Regulations.

For a Tranche B Specified Generator that is a new MCP, that is an engine fuelled on natural gas, the monitoring requirements are as follows:

Pollutant	**Type of Specified Generator**	**Fuel Type**	**Emission Limit Value (mg/Nm^3)**	**Monitoring Required**
NOx	Engine	Natural Gas	95*	Periodic – every 3 years
CO			No limit set	

*380 mg/Nm3 for dual fuel engines in gas mode.

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Emission limit values are defined at a temperature of 273,15 K, a pressure of 101,3 kPa and after correction for the water vapour content of the waste gases and at a standardised O_2 content of 15 % for engines (and gas turbines).

Based on the information in the Application and the requirements set in the conditions of the permit we are satisfied that the monitoring techniques, personnel and equipment employed by the Operator will have either MCERTS certification or MCERTS accreditation as appropriate. MCERTS monitoring is required as this plant is now a complex bespoke plant due to changes in habitats screening distance for Tranche B Specified Generators.

6.2 Other Permit Conditions

As a new Medium Combustion Plant, the site must adhere to the following operating techniques specific for MCP:

- Each MCP must be operated in accordance with the manufacturer's instruction and records must be made and retained to demonstrate this.
- The operator must keep periods of start-up and shut down of each MCP as short as possible.
- There must be no persistent emission of 'dark smoke' as defined in Section 3(1) of the Clean Air Act 1993.

As a Specified Generator, the facility must adhere to the following operating techniques for SG.

As a Specified Generator (SG), these are:

(a) Each generator must be operated in accordance with the manufacturer's instructions and records must be made and retained to demonstrate this.

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(b) The operator must keep periods of start-up and shut down of the generators as short as possible

(c) There must be no persistent emission of ‘dark smoke’ as defined in section 3(1) of the Clean Air Act 1993.

(d) Where secondary abatement is required to ensure compliance with the NOx ELV it must be met within 10 minutes from when the generator commences operation or within 20 minutes when the generator was a Tranche A and is now a Tranche B generator.

(e) The stack must be vertical and unimpeded by cowls or caps.

6.3 Reporting

We have specified the reporting requirements in Schedule 4 of the Permit to ensure data is reported to enable timely review by Natural Resources Wales to ensure compliance with permit conditions.

7 MCPD/SG Charges and Subsistence Fees

The type of application regarding MCPD and SG will have an associated charge. The MCP/SG application type will also form the basis for ongoing subsistence fees. More information on this can be found in our charging scheme on our website.

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