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Natural Resources Wales permitting decisions

Urban Reserve (AssetCo) Limited – Decision Document

Rev No1

Bespoke permit

The application number is: PAN-005749
The Applicant / Operator is: Urban reserve (AssetCo) Limited
The Facility is located at: Bear Power, Weighbridge Road, Deeside,
Flintshire, Wales, CH5 2LL

We have decided to grant the permit for Bear Power operated by Urban Reserve (AssetCo) 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 grant a permit for Bear Power.

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 which is subject principally to the 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.

2 How we reached our decision

2.1 Receipt of Application

The Application was accepted as duly made on **12 November 2019**. 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.

3 The Legal Framework

The Permit will be granted, 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

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

- One combined Tranche B Specified Generator/existing Medium Combustion Plant aggregated to <50MWth at a specified location
- One or more new medium combustion plant (MCP) between 1 and <50MWth but aggregated to <50MWth, which were put in operation on or after 20/12/2018 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.

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

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.

4.1.2 The Site

The proposed installation site is shown in the map below. The location of Urban Reserve (AssetCo) Limited's Bear Power site can be seen in the map below. The site's NGR is 331372,371798. The site is located next to a large warehouse which lies to the south west of the site and a car body shop is located to the north of the site. The site is located in a non-residential area, dominated by commercial and industrial uses. The nearest residential properties to the site are estimated to be over 1.5km away. The village of Puddington is located to the north of the site in England and to the south west of the site are the larger towns of Connah's Quay and Shotton.

The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility including two emission points.

A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.



4.1.3 What the Facility does

The installation will incorporate natural gas engines with a total thermal input of 11.93MWth, each engine will operate for 8,760 hours per annum. The Development will comprise of two 2.5MWe Gas-Engine Generating-Sets (gen-sets) with 7m exhaust stacks, a gen-set including a ventilation/cooling equipment, a local distribution network substation and customer substation buildings, and a gas kiosk. The gen-sets will be fired on natural gas and will export electricity for grid balancing purposes via the local 11kV HV network.

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**

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, if issued.

Relevant Convictions

NRW's COLINS Database has been checked to ensure that all relevant convictions have been declared.

No relevant convictions were found.

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. The decision was taken in accordance with RGN 5 on Operator Competence.

4.2.2 Management

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.

4.2.3 Operating techniques

The operator has stated that they will implement the following quality assurance techniques and maintenance schedule, in order to for the generators to achieve and retain optimal performance. In order to enable each generator and the power plant in general to achieve and retain optimal performance in both efficiency and emissions, the plant will engage in the following best available operational management techniques.

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes. The proposed techniques/ emission levels for priorities for control are in line with the benchmark levels contained in TGN M5 and we consider them to represent appropriate techniques for the facility. These are specified in the Operating Techniques table in the permit.

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, odour or noise although BAT does apply but only to air.

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.

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 stack and its impact on local air quality.

The Applicant has assessed the Installation'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 Installation's stack emission.

The air impact assessments, and the dispersion modelling has been based on the Installation operating continuously for a year (i.e 8,760 hours) at the relevant long-term or short-term emission limit values, i.e. the maximum permitted emission rate.

We are in agreement with this approach. The assumptions underpinning the model have been checked and are reasonably precautionary. The output from the model has then been used to inform further assessment of health impacts. The applicant has submitted modelling for NO_x. With respect to NO_x emissions, it is considered given the nature of the generators and fuel that the primary NO₂ to NO_x ratio will be <10%; therefore as per the SG guidance and the EA's Air Quality Modelling and Assessment Unit (AQMAU) guidance¹⁸ on conversion ratio for NO_x and NO₂ it has been assumed that 70% of NO_x is present as NO₂ in relation to long term impacts and 35% of NO_x is present as NO₂ in relation to short-term impacts.

The closest residential receptor is approximately 2.2km to the east of the site located at Shotwick.

Oxides of Nitrogen (NO_x) emissions

The applicant has modelled process contributions (PC) and predicted environmental concentrations (PEC) at the point of maximum impact as a screening method for the human health assessment, this is a location within the installation boundary.

The background NO₂ at the site is 14.5µg/m². The site does not lie within a Air Quality Management Zone. The Applicant has completed modelling on the annual mean NO₂ impacts at the nearby residential sites near the installation.

The maximum PC that has been predicted in the applicants modelling for human receptors is 0.10µg/m² which is 0.3% of the long term Air Quality Strategy (AQS) of 40µg/m². Therefore the annual PC can be considered insignificant at all the receptors as the PC is less than 1% and can be described as negligible.

The hourly PC at the point of maximum impact (at the site) is 30.9 % of the AQS objective level for hourly mean NO₂ concentrations (200 µg m⁻³). The highest impact PC on a human receptor is 1.7%. Therefore the annual PC can be considered insignificant at all the receptors as the PC is less than 10% and can be described as negligible.

The results indicate that at all receptor locations within the study area the relevant air quality standard for annual and hourly NO₂ concentrations could be screened out and considered insignificant in accordance with NRW guidance.

5.2 Impact on Habitats sites, SSSIs, non-statutory conservation sites etc

There are three SSSI's within 5km of the installation site, these are;

- Dee Estuary, (E3)
- Inner Marsh Farm (E1) and
- Shotton Lagoons + Reedbeds (E2)

As a result, an Appendix 4 form - CRow Act 2000: Natural Resources Wales application for permission - Formal Notice, has been completed in conjunction with this application.

Detailed air quality modelling impact assessment has been carried out with regards to any potential impact from the biomass facility on the designated SSSI sites within 2km of the facility. The significance criteria provided by the EA/NRW states that for SSSI's the air quality impact can be considered to be insignificant if the long-term process contribution (PC) is less than 1% of the Critical Level.

Results from the modelling predicts that the PC will fall below 1% at Shotton Lagoons + Reedbeds, Inner Marsh Farm will have a PC of 1.1% and The Dee Estuary 2.6%. Impacts can be considered insignificant when the PEC does not exceed 70% of the long-term standard, or 20% of the headroom between short term standard and short-term background concentrations. The PEC for the sites all fall well below the 70% with the maximum at Dee Estuary at 59.1%.

For short-term (24-hour) concentrations the EA/NRW significance criteria states that for SACs and SSSIs the impact can be considered to be insignificant if the PC is less than 10% of the Critical Level. Only The Dee Estuary exceed the 10% at with a %PC of 10.7%.

In conclusion, the impact on airborne NO_x concentrations, and acid and nitrogen deposition at the designated SSSI's was determined to be insignificant.

5.3 European Sites

The following Natura 2000 sites are located within the relevant screening distance (5km) of the main site emission point to air:

- Dee Estuary SPA UK9013011/ RAMSAR UK11082 / SAC UK0030131
- River Dee & Bala Lake SAC UK0030252
- Deeside and Buckely Newt SAC UK0030132

A 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 Natura 2000 sites listed above.

Detailed air quality modelling has been carried out with regards to the potential impact from the facility. The maximum predicted ground level concentrations of NO_x have been compared with relevant critical level thresholds above which damage may be sustained to sensitive plants and animals. For European sites within 5km, an assessment of deposition impacts has also been completed. Critical loads refer to the threshold beyond which deposition of pollutants to water or land results in measurable damage to vegetation and habitats. Predicted concentrations of NO_x can be used to determine nutrient nitrogen deposition rates, using typical deposition velocities. The maximum predicted deposition rates have been identified with site specific critical loads obtained from APIS.

The Dee Estuary and the River Dee has already been assessed in Appendix 4. Form 1 has come to the same conclusion as the Appendix 4. The River Dee and Bala Lake and The Dee Estuary have been assigned together due to location.

Deeside and Buckely Newt SAC falls well below the 1% and 10% for long term and short term respectively, with results of 0.3% and 3.8%.

Assessment of Likely Significant Effect:

The project has been screened for likelihood of significant effects and, taking account of the advice received from protected sites advisors, is considered not likely to have a significant effect on any Natura 2000/Ramsar site (As documented in section 3.2 of OGN 200 form 1, or section 5 if applicable)

Appropriate assessment:

In light of the conclusions of an appropriate assessment, and taking account of the advice received from protected sites advisors, it has been established that the project will not adversely affect the integrity of any Natura 2000/Ramsar site, taking into account any conditions or restrictions as applicable, either alone or in-combination

with other plans and projects. (As documented in section 4 of OGN 200 form 1, and section 5 if applicable)

HRA Overall conclusion:

In light of the conclusions of the appropriate assessment, it has not been ascertained that the project will not adversely affect the integrity of any Natura 2000/Ramsar site.

Long-term impacts and short-term impacts on human receptors are within specified criteria and therefore insignificant.

An assessment of the impact on nearby sensitive ecological sites has also been completed. The impact on airborne NO_x concentrations and nitrogen deposition at the sensitive habitats was determined to be insignificant.

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 the MCP Directive.

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 MCP Directive EPR Schedule 25B Regulations.

For a combined Tranche B Specified Generator and new Medium Combustion Plant, 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/Nm³)	Monitoring Required
NO _x	Gas Engine	Natural Gas	95	Periodic – every 3 years

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 O₂ content of 15% for engines (and gas turbines).

For emissions to air, the methods for continuous and periodic monitoring are in accordance with the Environment Agency's Technical Guidance Note M5 for monitoring of stack gas emissions from medium combustion plants and specified generators.

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.

6.2 Other Permit Conditions

As a combined Specified Generator/Medium Combustion Plant, the facility must adhere to the following operating techniques for both MCP and SG.

As a Medium Combustion Plant (MCP) these are:

- (a) Each MCP must be operated in accordance with the manufacturer's instructions and records must be made and retained to demonstrate this.
- (b) The operator must keep periods of start-up and shut-down of each MCP 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.

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.
- (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 NO_x 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 MCPD/SG application type will also form the basis for ongoing subsistence fee's. More information on this can be found in our charging scheme on our website.