Natural Resources Wales Permitting Decisions

MSFT MCIO Limited (Newport Campus)

Decision Document

Application for a Bespoke New Permit

The application number is: PAN-026552

The permit number is: EPR/DB3691FK/A001

The Applicant / operator is: MSFT MCIO Limited

The Installation is located at: Newport Campus, Celtic Lakes, Celtic Way, Duffryn, Newport, NP10 8BE

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.

Contents

Glossary of acronyms used in this document

(Please note that this glossary is standard for our decision documents and therefore not all these acronyms are necessarily used in this document.)

AQIA	Air Quality Impact Assessment
AQMP	Air Quality Management Plan
BAT	Best Available Technique(s)
BRef	Best Available Techniques Reference document
CO	Carbon monoxide
CO_2	Carbon dioxide
CO2e	Carbon dioxide equivalents
CROW	Countryside and Rights of Way Act 2000
DAA	Directly associated activity – Additional activities necessary to be carried out to allow the principal activity to be carried out
ELV	Emission limit value
EN	European Standard
EPR	Environmental Permitting (England and Wales) Regulations 2016
EQS	Environmental quality standard
GWP	Global Warming Potential
HRA	Habitats Regulations Assessment
HVO	Hydrotreated vegetable oil
IED	Industrial Emissions Directive (2010/75/EU)
LCP	Large Combustion Plant
MCP	Medium Combustion Plant
MCPD	Medium Combustion Plant Directive
MW_{th}	Net rated thermal input (in megawatts)
NH3	Ammonia
NIA	Noise Impact Assessment
NO	Nitrogen monoxide
NO_x	Oxides of nitrogen (NO plus NO_2 expressed as NO_2)
OPRA	Operator Performance Risk Appraisal
PC	Process Contribution
PEC	Predicted Environmental Concentration
PHW	Public Health Wales

PM	Particulate Matter
PM_{10}	Particulate matter with aerodynamic diameters of 10 microns and under
SAC	Special Area of Conservation
SCR	Selective catalytic reduction
SMNR	Sustainable Management of Natural Resources
SO_2	Sulphur dioxide
SPA(s)	Special Protection Area(s)
SSSI(s)	Site(s) of Special Scientific Interest
SuDS	Sustainable Urban Drainage System
TGN	Technical guidance note
UPS	Uninterruptable Power Supply

1. Executive summary

1.1. Application summary

MSFT MCIO Limited (Microsoft) (the Applicant) will operate a new data centre campus, comprising two data centre buildings CWL01 and CWL02. The Site will be located at Celtic Lakes, Celtic Way, Duffryn, Newport, NP10 8BE. The Installation name is Newport Campus. (This has been updated from Hyperscale Data Centre (as specified in the application) at the request of the Applicant.)

The permit regulates a Section 1.1 Part A (1) (a) installation activity under the Environmental Permitting (England and Wales) Regulations 2016 ("EPR") for the burning of any fuel in an appliance with a rated thermal input of 50 or more megawatts. The site consists of 31 stand-by engines and two fire water pumps with an aggregated thermal input rating of 253.8 MW. They will provide back-up generation for Newport Campus in the event of an electrical power supply failure from the National Grid. Each engine has its own individual stack and engines are enclosed in containers.

The engines have the capability of being run on hydrotreated vegetable oil (HVO) as well as diesel. Natural Resources Wales (NRW) considers that the impact of HVO on the environment is equivalent to, or slightly better than, the impact of gas oil (diesel). Therefore, if the Applicant can demonstrate that the HVO used in the Installation can meet one or more of these EN standards - EN15940/590/2869/14214 - we will not require them to submit an application to vary the permit.

There are two component data centre buildings ("data halls"), named CWL01 and CWL02, which each contain data storage, internal and external ancillary equipment. Twenty of the standby engines are located at the CWL01 data hall and 8 engines are located at the CWL02 data hall. There is also a water treatment plant that treats the water used in the server room cooling. This is located to the south of CWL01. The water treatment plant is for the treatment of water used in server room cooling and is not associated with the operation of the engines.

There are two administrative building engines for the provision of emergency back-up generation to fulfil the site's non-data hall energy demand. One will be located in CWL01 and the other in CWL02. One engine will provide emergency back-up generation to power the site's water treatment plant. This has a net rated thermal input of 1.1 MW.

There are two small diesel-fuelled combustion units that power fire water pumps. These have a net rated thermal input of 0.45 MW each.

All engines, with the exception of the fire water pump engines, are fitted with selective catalytic reduction (SCR) abatement to reduce the emission of oxides of nitrogen to air (NO_x) from the stacks.

The permit regulates testing and maintenance activity as well as the emergency back-up generation, which is further controlled under an Air Quality Management Plan (AQMP). The engines will be used solely for the purpose of generating power for the facility in the event of mains supply failure. No electricity will be exported from the Installation.

The engine specifications are as follows:

- 28 data hall engines are all CAT C175-20 (EM13161_07) engines with net rated thermal inputs (MWth) of 8.8
- 2 administrative building engines are CAT C32 engines with net rated thermal input (MWth) of 2.7
- 1 water treatment plant engine is CAT C15 engine with a net rated thermal input (MWth) of 1.1
- 2 fire water pump engines are Clarke JU6H-UF34 with net rated thermal input (MWth) of 0.45

Stack heights for the 31 standby generators are 14.5 m.

The engines are in “3n+1” configuration, meaning the site has three more engines than is required to fully power the associated load demand, plus one. This means that full backup power is still provided if one engine is unavailable.

Each engine has a rated thermal input between 0 MW and 50MW. Therefore, the data hall, administrative building and water treatment plant engines are considered Medium Combustion Plant (MCP) and subject to Schedule 25A of EPR. Each operates less than 500 hours per year and therefore are considered Limited Operating Hours MCP and exempt from the emission limit values within Schedule 25A of EPR. These engines are considered new MCP as they were first put into operation after 20 December 2018. The fire water pumps are not considered to be MCPs, as the rated thermal input of each engine is < 1 MW. As none of the engines export electricity to the National Grid, they are considered to be ‘excluded generators’ as defined in Schedule 25B of EPR.

As the aggregated net rated thermal input of the engines is >50MW, the Installation falls within the scope of Section 1.1 Part (A)(1)(a) of Part 2 of Schedule 1 of EPR. It also falls within the scope of Chapter II of the Industrial Emissions Directive (IED) (2010/75/EU), but not Chapter III. The requirements of the Medium Combustion Plant Directive (MCPD) will therefore apply as Best Available Techniques (BAT) as minimum standards.

The emissions to air from the Installation will primarily comprise of combustion gases including oxides of nitrogen. The engines meet the TA-Luft “2g” performance specification, which is considered BAT technology for EPR Section 1.1 Part (A)(1)(a) Data Centre activities. BAT is also employed in minimising the likelihood of mains supply failure, via measures such as having two direct and independent connections to the National Grid high voltage network which has a reported reliability of at least 99.999%.

In the unlikely event of a mains power failure, the site’s Uninterruptable Power Supply (UPS) will buffer small fluctuations in power supply. The UPS can supply power to the site for several minutes. If the UPS detects power failure or extended reduced power,

some, or all of the engines will start automatically to begin generating sufficient electricity to match the load required by the data centre.

The hours of operation for the testing of the stand-by diesel engines is restricted to 0900 hrs to 1700 hrs Monday to Friday and at no times on weekends or Bank or Public Holidays.

There are two possible operating scenarios:

- Emergency operation in the event of a power failure. This is a rare scenario.
- Operation for testing and maintenance, as detailed below.

Planned testing and maintenance scenarios are:

1. Monthly test – 15 minutes, 8 times per year at 30% engine loading;
2. Quarterly test – 30 minutes, 3 times per year at 70% engine loading;
3. Annual test – one hour, once per year at 100% engine loading;
4. Annual PIT test – 90 minutes, once per year at 60% engine loading;
5. Unit Substation Switchgear (Quinquennial) test – 90 minutes, once every five years at 60% engine loading; and
6. Uninterruptable Power Supply Switchgear (Quinquennial) test – 90 minutes, once every five years at 60% engine loading.

With the exception of Scenarios 5 and 6, the permit does not allow overlapping the testing scenarios.

Operation of the engines shall only be permitted under the following conditions:

- Planned operation of the engines for testing purposes (single engine);
- Unscheduled testing following unplanned repair (single engine); and
- Unplanned emergency operation for backup power provision in the event of failure of supply from the National Grid (all engines).

All fuel and other fluids (e.g. AdBlue for the SCR system) are suitably bunded, including pipe lines where present to provide at least secondary containment. Each engine has fuel supply capacity for 48 hours of operation, provided by individual

engine tanks. There is no fuel interconnection between engines. Engines and fuel supply are suitably located on hardstanding.

Uncontaminated surface water is routed to a Sustainable Urban Drainage System (SuDS) which will remove relevant pollutants from the surface water runoff. Treatments used on-site include the use of permeable pavement, ponds to store surface drainage, and petrol interceptors to filter out hydrocarbon contaminants. Uncontaminated surface water is discharged to the environment via emission point W1. There are no point source discharges to sewer.

The site is located on an Industrial Estate at Celtic Way, Newport. The surrounding area is a mix of industrial, commercial and residential use along with environmentally sensitive receptors. Nearby designated sites that have been considered in assessments are the Gwent Levels – St Brides Site of Special Scientific Interest, River Usk Special Area of Conservation, and Severn Estuary Special Area of Conservation, Special Protection Area & Ramsar, along with surrounding Local Wildlife Sites.

The emissions from the exhaust gas will comprise of:

- Oxides of nitrogen (NO and NO_2 expressed as NO_2 (NO_x))
- Ammonia (NH_3)
- Particulate Matter (PM)
- Sulphur Dioxide (SO_2) (low sulphur fuel will be used, 0.1%)

Raw materials will consist of diesel, ‘AdBlue’ (for use in the SCR system), engine oil/lubricants and antifreeze/coolant. Waste will be kept to a minimum. Condition 1.4.1 of the permit requires the operator to apply the waste hierarchy from Article 4 of the Waste Framework Directive. Any waste generated will be disposed of via a licenced contractor.

1.2. Our decision

We have granted the permit operated by MSFT MCIO 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.

2. Receipt of the application

The application was received on 02/08/2024. In order for us to be able to consider the application duly made, we needed more information. We requested the following:

- the Charge Banding Tool spreadsheet used to calculate the application fee;
- A completed OPRA spreadsheet for the proposed Installation;
- Annex I (of the MCPD) information for each engine that falls into the definition of a MCP;
- Certificates of Competence for persons who have contributed to the Noise Impact Assessment (NIA);
- Clarification with regard to the proposals for storage of diesel and Ad Blue and a description of how the proposals align with the guidance in CIRIA C736f (Containment systems for the prevention of pollution: Secondary, tertiary and other measures for industrial and commercial premises)[1];
- Clarification regarding the 'Day 1' and 'Day 2' power supplies to the Installation; and
- In relation to the Air Quality Impact Assessment, provision of:
    - Modelling Contour Plots;
    - High-level assessment of the impact of SO_2 on human health and the environment;
    - Impact assessment on non-statutory ecological receptors located within 2km radius of the proposed Installation;
    - Clarification of and / or justification of the use of various acidity critical loads in the ecology air impact assessment; and

[1] CIRIA C736f (Containment systems for the prevention of pollution: Secondary, tertiary and other measures for industrial and commercial premises)

- For European Protected Sites, and assessment of the impact of the proposed Installation on these receptors in combination with any other plans or projects.

A letter requesting this information was sent to the Applicant on 19/11/2024. Upon receipt of this information, on 20/02/2025, we were able to consider the application duly made. 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.

3. Confidential information

The Applicant made no claim for commercial confidentiality, and we have not received information in relation to the application that appears to be confidential in relation to any party.

4. Legislation

The permit is 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:

- an *Installation* as described by the IED;
- an aggregation of Medium Combustion Plant as described by the MCPD;
- 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; and
- A *relevant Installation* in respect of Schedule 24 of EPR: Energy Efficiency Directive (new MCP >20 MWth aggregated or individual).

We address the legal requirements directly where relevant in the body of this document. NRW is satisfied that the decision on this application 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 Installation 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

As the EPR regulator in Wales, NRW are required to determine any duly made permit application. This means that we must decide either to grant, or to refuse permit based upon an objective assessment of the proposals against the detailed legal requirements of EPR. Our public participation statement[2] gives more information on what can, and cannot, be taken into account when making our permitting decision.

The application, and this decision document, only considers the permitting of the facility under EPR as described throughout the document. We only assess the Installation and its impacts and cannot take into consideration indirect impacts which are not as a direct result of activity within the Installation boundary.

Any proposed development and wider associated activities will be required to be compliant with all relevant and applicable law, for example, environmental law, health and safety law, planning law. This other legislation acts largely independently of EPR (although they may be inter-related). Such other matters are beyond both the scope of this document, and of our regulatory remit and expertise and are not relevant to our EPR permitting decision. Ensuring compliance with all other regulation and obtaining any required consents (such as planning permission) is the responsibility of those undertaking the development and is regulated by the relevant appropriate authority for each.

5. Consultation

5.1. Consultation on the Application

We have carried out consultation on the application in accordance with the Environment Permitting Regulations (EPR), our statutory Public Participation Statement (PPS) and our Regulatory Guidance.

[2] Natural Resources Wales / Public participation: how you can take part in our permit and licence consultations

A copy of the application is available on the public register for anyone to view. We advertised the application to the public by a notice placed on our website directing people to the public register, advising them of how they could arrange for copies to be made if required and how they can provide comments.

We also consulted with the following bodies, which includes those with whom we have "Working Together Agreements":

- Public Health Wales
- Health and Safety Executive
- Local Authority Planning Department - Newport
- Local Authority Environmental Health Department – Newport

These are bodies whose expertise, democratic accountability and/or local knowledge make it appropriate for us to seek their views directly.

The consultation started 20/02/2025 and ended on 21/03/2025.

A summary of consultation comments and our response to the representations we received can be found in Annex 3. We have taken all relevant representations into consideration in reaching our decision.

5.2. Draft Permit Consultation

We carried out a consultation on our draft decision. This consultation began on 31/12/2025 and ended on 28/01/2026.

6. Requests for information

Further information was requested during determination by way of three Schedule 5 Notices requiring the Applicant to provide further information relating to:

- Air Quality Impact Assessment; and
- Noise Impact Assessment.

The Schedule 5 Notices were sent on:

- Notice 1: sent on 30/04/2025 with a deadline for response of 04/06/2025;

- Notice 2: sent on 08/05/2025 with a deadline for response of 28/05/2025; and
- Notice 3: sent on 25/09/2025 with a deadline for response of 10/10/2025.

The Applicant's response to Schedule 5 Notice 1 was provided on 12/06/2025. The additional information supplied satisfied the requirements of the Schedule 5 Notice.

The Applicant's response to Schedule 5 Notice 3 was provided on 08/10/2025. The additional information supplied satisfied the requirements of the Schedule 5 Notice.

The Applicant's initial response to Schedule 5 Notice 2 was provided on 05/06/2025. The additional information supplied did not satisfy the requirements of the Schedule 5 Notice and so the Notice was re-issued on 06/08/2025 with additional information explaining why the initial response was not sufficient. The deadline for response date was extended to 13/08/2025. The Applicant provided further information on 13/08/2025 which we considered did not satisfy the request of the Schedule 5 Notice. We re-issued the Notice on 25/09/2025 with additional information explaining why the initial response was not sufficient. The deadline for response date was extended to 10/08/2025. The Applicant provided further information on 08/10/2025 which we considered did satisfy the request of the Schedule 5 Notice.

Several informal information requests were also made via email. These related to:

- Calculations made using the data produced by the Applicant's air dispersion modelling (supplied in the form of spreadsheets);
- Errors identified in the above mentioned spreadsheets; and
- Revision of the supplied Site Plan.

A copy of the information notice(s) and e-mails requesting further information were placed on our public register as were the responses when received.

7. The Installation

7.1. The permitted activities

The regulated facility will be an Installation which comprises the following activities listed in Part 2 of Schedule 1 to the Environmental Permitting Regulations:

- Section 1.1 Combustion Activities - Part A (1) (a) Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts.

An Installation may also comprise “directly associated activities”, which at this Installation will include:

- Fuel storage (diesel or Hydrotreated vegetable Oil)
- Surface water drainage system (uncontaminated rainwater)
- Chemical storage (AdBlue)

Together, these listed and directly associated activities comprise the Installation.

7.2. What the Installation will do

Microsoft is proposing to construct and operate a new data centre campus, comprising two data centre buildings CWL01 and CWL02. The Site is located at Celtic Lakes, Celtic Way, Duffryn, Newport, NP10 8BE.

The permit regulates a Section 1.1 Part A (1) (a) Installation activity under the Environmental Permitting (England and Wales) Regulations 2016 (“EPR”) for the burning of any fuel in an appliance with a rated thermal input of 50 or more megawatts.

The site consists of 33 standby diesel engines with an aggregated thermal input rating of 253.8 MW. They will provide back-up power generation for Newport Campus in the event of a power supply failure from the National Grid. Each engine has its own individual stack and engines are enclosed in containers.

The engines have the capability running on hydrotreated vegetable oil (HVO). NRW considers that the impact of HVO on the environment is equivalent to, or slightly better than, the impact of gas oil (diesel). Therefore, if the Applicant can prove that that the HVO used in the Installation can meet one or more of these EN standards - EN15940/590/2869/14214 - we will not require them to submit an application to vary the permit.

There are two component data centre buildings (“data halls”), named CWL01 and CWL02, which each contain data storage, internal and external ancillary equipment. Twenty of the standby engines are located at the CWL01 data hall and 8 engines are

located at the CWL02 data hall. There is also a water treatment plant that treats the water used in the server room cooling. This is located to the south of CWL01. The water treatment plant is for the treatment of water used in server room cooling and is not associated with the operation of the engines. However, one dedicated engine will provide emergency back-up generation to power the site's water treatment plant in the event of a National Grid power supply failure.

There are two administrative building engines for the provision of emergency back-up generation to fulfil the site's non-data hall energy demand. One will be located in CWL01 and the other in CWL02.

There are two small diesel-fuelled engines that power fire water pumps. These have a net rated thermal input of 0.45 MW each.

All engines, with the exception of the engines that power the fire water pumps, are fitted with selective catalytic reduction (SCR) abatement to reduce the emission of oxides of nitrogen to air from the stacks.

The permit regulates testing and maintenance activity well as the emergency back-up generation, which is further controlled under an Air Quality Management Plan (AQMP). The engines will be used solely for the purpose of generating power for the facility in the event of mains supply failure. No electricity will be exported from the Installation.

The engine specifications are as follows:

- 28 data hall engines are all CAT C175-20 (EM13161_07) engines with net rated thermal inputs (MW_{th}) of 8.8
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- 2 fire water pump engines are Clarke JU6H-UF34 with net rated thermal input (MW_{th}) of 0.45

Stack heights for the 31 standby generators are 14.5 m.

The engines are in “3n+1” configuration, meaning the site has three more engines than is required to fully power the associated load demand, plus one. This means that full backup power is still provided if one engine is unavailable.

Each engine has a thermal input between 0 MW and 50MW and is not subject to Chapter III of Industrial Emissions Directive (IED). Therefore, the data hall, administrative building and water treatment plant engines are considered Medium Combustion Plant (MCP) and subject to Schedule 25A of EPR. Each operates less than 500 hours per year and therefore are considered Limited Operating Hours MCP and exempt from the emission limit values within Schedule 25A of EPR. These engines are considered new MCP as they were first put into operation after 20 December 2018. The fire water pumps are not considered to be MCPs, as the rated thermal input of each engine it <1 MW. As none of the engines export electricity to the National Grid, they are considered to be ‘excluded generators’ as defined in Schedule 25B of EPR.

The emissions to air from the Installation will primarily comprise of combustion gases including oxides of nitrogen. The engines meet the TA-Luft “2g” performance specification, which is considered Best Available Technique (BAT) technology for EPR Section 1.1 Part (A)(1)(a) Data Centre activities. BAT is also employed in minimising the likelihood of mains supply failure, via measures such as having 2 direct and independent connections to the National Grid high voltage network which has a reported reliability of at least 99.999 %. In the unlikely event of a mains power failure, the site’s UPS will buffer small fluctuations in power supply. The UPS can supply power to the site for several minutes. If the UPS detects power failure or extended reduced power, some, or all of the engines will start automatically to begin generating sufficient electricity to match the load required by the data centre.

The hours of operation for the testing of the stand-by diesel engines is restricted to 0900 hrs to 1700 hrs Monday to Friday and at no times on weekends or Bank or Public Holidays.

There are two possible operating scenarios:

- Emergency operation in the event of a power failure. This is a rare scenario.
- Operation for testing and maintenance, as detailed below.

Planned testing and maintenance scenarios are:

1. Monthly test – 15 minutes, 8 times per year at 30% engine loading;
2. Quarterly test – 30 minutes, 3 times per year at 70% engine loading;
3. Annual test – one hour, once per year at 100% engine loading;
4. Annual PIT test – 90 minutes, once per year at 60% engine loading;
5. Unit Substation Switchgear (Quinquennial) test – 90 minutes, once every five years at 60% engine loading; and
6. Uninterruptable Power Supply Switchgear (Quinquennial) test – 90 minutes, once every five years at 60% engine loading.

With the exception of Scenarios 5 and 6, the permit does not allow overlapping of the testing scenarios.

Operation of the engines shall only be permitted under the following conditions:

- Planned operation of the engines for testing purposes (single engine);
- Unscheduled testing following unplanned repair (single engine); and
- Unplanned emergency operation for backup power provision in the event of failure of supply from the National Grid (all engines).

All fuel and other fluids (e.g. AdBlue for the SCR system) are suitably bunded, including pipe lines where present to provide at least secondary containment. Each engine has fuel supply capacity for 48 hours of operation, provided by individual engine tanks. There is no further fuel interconnection between engines. Engines and fuel supply are suitably located on hardstanding.

Uncontaminated surface water is routed to a Sustainable Urban Drainage System (SuDS) which will remove relevant pollutants from the surfaced water runoff. Treatments used on-site include the use of permeable pavement; ponds to store surface drainage; and petrol interceptors, to filter out hydrocarbon contaminants.

Uncontaminated surface water is discharged to the environment via the emission point W1. There are no point source discharges to sewer.

8. Operation of the Installation

8.1. Operator competence

The Applicant is the sole operator of the Installation. We are satisfied that the Applicant is the person who will have control over the operation of the Installation and that they will be able to operate the Installation so as to comply with the conditions included in the permit. The decision was taken in accordance with EPR RGN 1 'Understanding the meaning of operator'[3].

Relevant Convictions

The Applicant has declared they have no relevant convictions.

NRW's COLINS Database has been checked to confirm there are no relevant convictions. No relevant convictions were found.

Financial Provision

The Applicant has declared they have no current or past bankruptcy or insolvency proceeding against them.

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 EPR RGN 5 on 'Operator Competence'.

8.2. Environmental Management System

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[4]. The operator has confirmed in

[3] RGN 1 Understanding the meaning of 'operator' (naturalresources.wales)
[4] Natural Resources Wales / Guidance to help you comply with your environmental permit

the application that their EMS is certified to ISO 14001:2015. The Applicant has submitted a summary of the EMS with their application.

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

Accident management

We have reviewed the Applicant's proposed risk management techniques that will be imposed in the event of various accidents and incidents which may occur. We have reviewed this and are satisfied that appropriate controls are in place to help reduce the occurrence and impact of any accidents and incidents that occur. We have included an Improvement Condition (IC4) requiring the Applicant to provide updated versions of their Diesel Spillage and Emergency Response Procedures within 3 months of the date of issue of the permit. We have also included an Improvement Condition (IC5) in the permit requiring the Applicant to provide evidence of the integration Newport Campus into their company-wide EMS within 3 months of the date of issue of the permit. IC5 requires that the EMS incorporates the procedures produced in response to IC4.

In order to ensure that the management system proposed by the Applicant sufficiently manages the residual risk of accidents, permit condition 1.1.1a requires the implementation of a written management system which addresses the pollution risks associated with, amongst other things, accidents.

There is a specific type of accident management plan – termed an Air Quality Management Plan (AQMP) - for air quality impacts which is discussed in Section 10.1.

Efficient use of raw materials, water and energy

Having considered the information submitted in the application, we are satisfied that the Applicant will ensure that raw materials, water and energy are used as efficiently as possible.

The operator will be required to ensure raw materials are used efficiently under condition 1.3 of the permit. They will also need to report engine operation for maintenance and testing and emergency scenarios. This will enable us to monitor energy efficiency at the Installation (along with ensuring air quality impacts are minimised).

Schedule 24 of EPR implements the efficiency in heating and cooling energy requirements of the Energy Efficiency Directive. Although the Installation falls within the scope of a *relevant installation*, as defined by Schedule 24 of EPR, as will operate for <1500 hours per year, the Applicant is not required to consider the feasibility of a combined heat and power and / or district heating system.

Avoidance, recovery or disposal of wastes produced by the activities

Expired AdBlue will be removed from the site by a licensed contractor.

We are satisfied that waste from the Installation that cannot be recovered will be disposed of offsite using a method that minimises any impact on the environment. Permit condition 1.4.1 of the permit will ensure that this position is maintained.

8.3. Operating techniques

Installation activities and assessment of Best Available Techniques

Article 14(3) of IED states that BAT conclusions (BATc) should be the reference for setting permit conditions. However, there are no published BATc which are directly relevant to this proposal. Although the total thermal capacity of the Installation is 253.8 MW_{th}, neither Chapter III of IED (for Large Combustion Plants (LCP)) nor the LCP BATc are directly applicable as the individual combustion plant (engines) are each less than 15 MW_{th} and exhaust gases from them are discharged through separate stacks which could not reasonably be combined, and thus aggregation is not applicable. In this situation Article 14(6) of IED applies, making the regulator responsible for determining BAT in consultation with the operator and considering the criteria in Annex III of IED (as far as it is applicable to this Installation).

In line with previous applications for this type of activity, we have defined BAT in this case as:

- As each individual plant 1MW$_{th}$ and over is subject to the MCPD, the requirements of the Directive (Schedule 25A of EPR) for each individual engine may be considered minimum standard BAT for the collective combustion plant, noting that exemptions apply for plant operating for a limited number of hours;
- As the most relevant BAT conclusions, we may refer to the LCP BATc "for information" only if applicable;
- The above is supplemented but not replaced by BAT definitions in our adopted regulatory guidance:
    - Natural Resources Wales "BAT for [Installation] combustion plant outside of the scope of the LCP BREF – Interim Position", 30/04/2019;
    - Environment Agency (EA) guide 'Data Centre FAQ Headline Approach; Draft Version 8.0 (17/07/17)' – adopted by NRW in the above position document;
    - It is noted that subsequently, the EA have released further versions of this document, up to Version 21 (15/11/2022)[5] – to which we will also refer;
    - GOV.UK guidance, "Emergency backup diesel engines on Installations: best available techniques (BAT)"[6]; and
    - As backup engines on an IED Chapter II Installation, the plant is excluded from the Specified Generator regulations, but these may provide indicative BAT, for example the maximum annual duration of testing operations.

We have also had regard to Article 18 of IED which may require measures "beyond BAT" to be taken if required in order to achieve compliance of air quality standards.

The Applicant has considered these requirements in their application. They have completed an assessment of BAT applicability for the Installation against the:

[5] Data Centre FAQ Headline Approach, version 21.0 (15/11/2022)
[6] Emergency backup diesel engines on Installations: best available techniques (BAT) - GOV.UK

- Data Centre FAQ Headline Approach, version 21.0 (15/11/2022); and
- Large Combustion Plant BAT conclusions.

We consider this to be an appropriate approach, for the reasons outlined above.

We have reviewed the techniques proposed and consider them to represent BAT at this Installation. We have specified that the Applicant must operate the permit in accordance with descriptions in the application.

Key parts of the assessment have been detailed below.

Engine Selection

It is accepted that BAT for data centre emergency power generation is the use of engines. Engine selection is a key BAT consideration as it defines the fundamental performance standards that we expect to see demonstrated by the operator.

BAT for emergency backup diesel engines on data centres is primarily based on engine selection and management techniques, both of which are used to minimise NO_x emissions. Relevant guidance states that engines should be optimised to reduce emissions (termed “emissions optimised” engines). The accepted standard for emissions optimised engines is represented by the international build standards “2g TA-Luft” or the United States Environmental Protection Agency (US EPA) Tier 2. This equates to approximately 750mg/m^3 NO_x (as NO_2) at reference conditions 15% O_2, standard temperature and pressure, dry, 273K and 101.3kPa (equivalent to 2,000mg/m^3 at 5% O_2 – commonly termed ‘2g’) at a typical emergency load (usually greater than 67% of standby power rating).

BAT for engines using SCR is detailed in the Data Centre FAQ document and is defined as emissions which are equivalent to the MCPD Emission Limit Value (ELV) compliance at 190 mg/m^3 (at 15% O_2, equivalent to 500 mg/m^3 at 5% O_2) which as described above, these new SCR fitted engines are capable of achieving.

Considering the relevant guidance and the air quality modelling impacts (see Section 10.1) we consider the engines to represent BAT.

An improvement condition (IC6) will be included in the draft permit requiring the Applicant to verify that the new engine emissions do not exceed those outlined in the application (see also Annex 1).

Plant Design, Monitoring and Maintenance

For all combustion appliances, plant design features and planned preventative maintenance are important primary measures to maintain optimum performance and minimised emissions in line with manufacturer's performance specification for the units. Plant design is determined by engine selection which has been discussed above.

The Applicant has confirmed monitoring of emissions will be compliant with requirements of the MCPD. The SCR system uses an Electronic AdBlue dosing and monitoring package with NO_x, temperature and back pressure sensors, airless injectors, and an electronic control unit for NO_x control and measurement.

Emergency use of the engines is considered unlikely due to the operator implementing BAT for primary grid connection. The permit will limit engine operating hours to a maximum 500 hour limit per MCP per year. It will also include a limit on testing of a maximum of 50 hours per MCP per year.

Fuel selection

The engines will be fuelled on diesel which is considered BAT for this type of Installation. They also have the capability of being fuelled on HVO. Although HVO is not formally considered to represent BAT for fuel selection (due to issues with supply reliability), we consider it preferable to diesel as it is a low carbon fuel and is associated with lower NO_x, carbon monoxide and particulate emissions.

NRW considers that the impact of HVO on the environment is equivalent to, or slightly better than, the impact of gas oil (diesel). Therefore, if the Applicant can prove that that the HVO used in the Installation can meet one or more of these EN standards -

EN15940/590/2869/14214 - we would not require them to submit an application to vary the permit.

9. The site

9.1. Site Plan

The Applicant has provided a plan which we consider is satisfactory, showing the extent of the site of the facility and its emission points.

The plan will be included in the permit and the operator will be required to carry on the permitted activities within the site boundary.

9.2. Site Condition Report

The Applicant has provided a description of the condition of the site in a Site Condition Report. We have reviewed this and consider this description is satisfactory. The decision was taken in accordance with our guidance on site condition reports – guidance and templates (H5)[7].

9.3. Site protection: potentially polluting substances and prevention measures

The operator has a duty to ensure that soil and groundwater are protected in order to meet the requirements of Articles 14 (1)(b), 14(1)(e) and 16(2) of the IED.

Potentially polluting substances associated with this application include fuel (diesel or HVO), AdBlue and mineral lube oil.

Oil and fuel present onsite will be stored in belly tanks located underneath each of the 28 emergency back-up engines. All of the tanks are integrally bunded (double skinned) and have a capacity of 40,000 litres. The two administrative building generators also have diesel belly tanks, these are sized 6,050 litres each. The water treatment generator has a standalone tank sized 4,000 L. The two diesel fuelled fire pumps will also have storage tank associated with them. The Site's aggregated fuel storage

[7] Environmental Permitting Regulations , Guidance for Applicants H5, Site Condition Report, Guidance and Template (naturalresources.wales)

capacity is circa 1,136,100 litres. All fuel tanks >20 litres in volume will be stored externally and will be installed with secondary containment with a capacity of 110% containment capacity of the primary container.

The SCR systems will utilise a series of above ground AdBlue storage tanks, there will be 28 tanks associated with each engine, each sized circa 2,200 litres. All bulk AdBlue storage tanks will have suitable secondary containment installed including bunds with 110% containment capacity of the primary tanks. The Site operatives will monitor the AdBlue levels daily and visual inspections will be carried out when appropriate. There is a vent line, which is directed into the bunded area in case of discharge through the vent connection, with the fill line being fitted with an Overfill limiting device to which shuts down when the fuel reaches to preset level.

The secondary containment steel bunded area on the fuel and AdBlue storage tanks is impervious (aligned to CIRIA C736).

Based upon the information in the application we are satisfied appropriate measures will be in place to protect the site and its surroundings from polluting substances.

9.4. Closure and decommissioning

Permit condition 1.1.1 requires the Operator to have a written management system in place which identifies and minimises risks of pollution including those arising from closure.

At the definitive cessation of activities, the operator has to satisfy us that the necessary measures have been taken so that the site ceases to pose a risk to soil or groundwater, taking into account both the baseline conditions and the site's current or approved future use. To do this, the operator has to apply to us for surrender, which we will not grant unless and until we are satisfied that these requirements have been met.

10. Environmental Risk Assessment

Regulated activities can present different types of risk to the environment, these include odour, noise and vibration; accidents, fugitive emissions to air and water; as

well as point source releases to air, water, sewer and discharges to ground or groundwater, global warming potential and generation of waste. All these factors have been considered during our determination and the relevant risks from this proposal are discussed in this and other sections of this document.

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

In line with our guidance, the Applicant has provided an environmental risk assessment with the application which identifies the sources of key risks from the Installation, possible pathways and receptors. This risk assessment and further assessments provided by the Applicant and/or completed by NRW will be discussed in further detail below.

10.1. Assessment of impact on air quality

This section of the decision document looks at the air dispersion modelling included in the Air Quality Impact Assessment (AQIA) submitted with the application and impacts on local air quality and human health. Impacts on air quality at protected sites are discussed separately in Section 11 but have been considered on the basis of the same underlying dispersion modelling.

The Applicant has assessed the Installation's potential emissions to air against the relevant air quality standards, and the potential impact upon human health in line with relevant guidance[8,9]. The modelling has predicted the process contribution (PC) at human and ecological receptors that could be impacted by the emissions from the permitted activity.

[8] Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk)
[9] Acute Exposure Guideline Levels for Airborne Chemicals | US EPA

The PC is the estimated concentration of an emitted substance, and when calculated within a dispersion model, takes into account relevant parameters of the release and surrounding conditions, including local meteorology.

Once short-term and long-term PCs have been calculated, they are compared with Environmental Quality Standards (EQS). PCs are considered insignificant if:

- The long-term PC is less than 1% of the relevant EQS; and
- The short-term PC is less than 10% of the relevant EQS.

When an emission is screened out as insignificant, we would normally consider that the Applicant's proposals for prevention and control of the emission are acceptable. Where an emission cannot be screened out as insignificant, it does not mean it will necessarily be significant. In these cases, we determine whether exceedances of the relevant EQS are likely. This is done through detailed audit and review of the Applicant's dispersion modelling, taking background concentrations and modelling uncertainties into account. Assessment considers the predicted environmental concentration (PEC), which is the PC of the substance, plus the background concentration of the substance already present in the environment. PECs are normally considered to be not significant where:

- Proposed emissions comply with EQS or the equivalent requirements where there is no EQS; and
- The resulting PECs do not exceed 100% of the EQS.

The assessment has predicted the potential effects on local air quality from the Installation's stack emissions using the AERMOD Lakes dispersion model which is a widely accepted computer model used in regulatory dispersion modelling. The model used 5 years of meteorological data collected from the meteorological station at Cardiff Airport between 2017 and 2021, which we consider satisfactory. The impact of the nearby buildings surrounding the site upon plume dispersion was considered in the modelling. The assessment has been based on using diesel: we have not required the Applicant to complete a modelling assessment for HVO due to the similarities between the fuels with regard to the emissions to air generated from their combustion.

We have not required the operator to complete a detailed assessment of SO_2 emissions as the operator is proposing to use ultra-low sulphur diesel (or HVO) which both have inherently very low, or negligible, sulphur contents. To demonstrate the very low sulphur emissions, the Applicant has used the anticipated fuel consumption from the worst preforming engine in terms of NO_x emissions to calculate a maximum 1 hour SO_2 PC of 0.110 µg/m^3 for a single engine or 2.05 µg/m^3 for all engines. They have considered the applicable EQS for SO_2 of 350 µg/m^3 (hourly mean). In both cases, the PCs are below 10% (0.03% and 0.59% for single engine and all engines respectively) and so we agree emissions can be considered insignificant.

Carbon Monoxide (CO) has not been subject to assessment and we are in agreement with this approach in this instance. This is because of the low potential for generation of CO via the combustion of diesel and HVO.

A screening exercise, based on all engines running at the same time at full load, for particulate matter with aerodynamic diameters of 10 microns and under (PM_{10}) was conducted. The exercise concluded that for short term (daily) PM_{10}, emissions would not be significant and therefore they are not discussed further in this document.

Long term (annual) PM_{10} and $PM_{2.5}$ have not been assessed in line with the expectation that the engines will not be operating on a long term basis (the maximum duration of any of the modelled scenarios is only 72 hours).

A side-effect of use of SCR with urea (contained in AdBlue) can be “ammonia slip” – the release of low levels of ammonia (NH_3) in exhaust gases. Ammonia is a pollutant which can affect human health and particularly ecological receptors. The Applicant has included an assessment of impact of NH_3 in their AQIA – this is discussed further below. For human health, the short term (1 hour) EQS for NH_3 is 2,500 µg/m^3. There is no EQS for long term (annual) NH_3.

The principle pollutant of concern which was subject to detailed modelling was Oxides of Nitrogen (NO_x), (NO and NO_2 expressed as NO_2), with both nitrogen deposition and acid deposition assessed.

The air impact assessments, and the dispersion modelling has been based on the following emission rates:

- 28 permitted engines (CAT C175-20) (CWL01 and CWL02 Data Halls) at pollutant emission rates specified by the engine manufacturer;
- 2 permitted engines (CAT C32) (Administrative buildings) at pollutant emission rates specified by the engine manufacturer; and
- 1 permitted engine (CAT C15) (Water Treatment Plant) at pollutant emission rates specified by the engine manufacturer.
- "new" engines fitted with SCR (EP A1 – A28, A29 – A30, A31) are assumed to meet the MCPD Emission Limit Values (ELV). However it is expected that NO_x will not be fully abated during startup of the engines. This has been accounted for in the model using supplier data.

The fire water pump engines have not been included in the modelling exercise due to their small rated thermal input size and the very low probability of a electrical power outage incident occurring at the same time as a fire.

The detailed modelling assessed the following scenarios:

- Planned testing and maintenance: Monthly test – 15 minutes, 8 times per year at 30% engine loading; Quarterly test – 30 minutes, 3 times per year at 70% engine loading; Annual test – one hour, once per year at 100% engine loading; Annual PIT test – 90 minutes, once per year at 60% engine loading; Unit Substation Switchgear (Quinquennial) test – 90 minutes, once every five years at 60% engine loading; and Uninterruptable Power Supply Switchgear (Quinquennial) test – 90 minutes, once every five years at 60% engine loading;
- Unplanned emergency operation – 1 hour; and
- Unplanned emergency operation – 72 hours.

Impacts of the proposed engines have been modelled at 21 discrete sensitive human receptors, and assessment of significance of the results have been presented from the highest modelled impacted receptor.

The short-term EQS for NO_2 is an hourly limit value of 200 µg/m^3, which must not be exceeded more than 18 times per year. The long-term (annual) limit value is 40 µg/m^3.

The short-term EQS for Nitrogen Monoxide (NO) is an hourly limit value of 4,400 µg/m^3, which must not be exceeded more than 18 times per year. The long-term limit value is 310 µg/m^3 .

In accordance with our adopted guidance for Data Centres, the Applicant has also assessed impacts against the Acute Exposure Guidance Levels (AEGL)[10] as defined by the US EPA and which are applicable to "*rare exposure to airborne chemicals*".

Three levels of AEGL are defined for any substance assessed under the scheme. AEGL-1 is the lowest level, where notable discomfort or irritation may occur, but effects are non-disabling, transient and reversible upon exposure ending. AEGL-2 is a level at which irreversible or serious long-lasting health effects may occur, and AEGL-3 is a level at which life-threatening health effects or death may occur.

The focus in this assessment is mainly on AEGL-1, with AEGL-3 not being relevant. AEGLs are defined for short-term exposures of 10 minutes, 30 minutes, 60 minutes, 4 hours and 8 hours. For NO_2 the AEGL-1 is the same (940 µg/m^3) for all exposure periods of 10 minutes to 8 hours and the AEGL-2 varies with exposure period, from a minimum of 12,600 µg/m^3 for an 8 hour exposure, to a maximum of 38,000 µg/m^3 for 10-minute exposure. The AEGL-1 is directly comparable with the UK Health and Safety Executive 8-hour workplace exposure limit.

Planned testing
For testing scenarios, the Applicant has modelled short term emissions from the site.

The results presented below represent the maximum PC at any of the modelled receptors for the relevant pollutant species. This represents worst-case scenario as by definition, all other receptors have modelled PCs that are lower than the maximum.

[10]United States Environmental Protected Agency: Acute Exposure Guideline Levels for Airbourne Chemicals

Monthly testing

For this scenario, modelling results predicted:

- **Short term NO_2:** the maximum PC (4.3 µg/m^3) was less than 10% of the short term EQS (2.2%) and therefore could be screened out as insignificant.

- **Short term NO:** the maximum PC (8.2 µg/m^3) was less than 10% of the short term EQS (0.19%) and therefore could be screened out as insignificant.

- **AEGL-1:** PCs were above 1% of the relevant AEGL-1 for all exposure periods considered (10-minute, 30-minute, 1-hour, 4-hour and 8-hour). However, when combined with the background concentration, the PECs were all less than 70% of the relevant EQSs (AEGL-1: 10-minute (11%), 30-minute (6.9%), 1-hour (6%), 4-hour (6%) and 8-hour (6%)). Therefore, no exceedance of AEGL-1 was predicted.

- **Short term NH_3:** the maximum PC (0.215 µg/m^3) was less than 10% of the short term EQS (0.0086%) and therefore could be screened out as insignificant.

Quarterly testing

For this scenario, modelling results predicted:

- **Short term NO_2:** the maximum PC (12 µg/m^3) was less than 10% of the short term EQS (6%) and therefore could be screened out as insignificant.

- **Short term NO:** the maximum PC (22.8 µg/m^3) was less than 10% of the short term EQS (0.52%) and therefore could be screened out as insignificant.

- **AEGL-1:** PCs were above 1% of the relevant AEGL-1 for all exposure periods considered (10-minute, 30-minute, 1-hour, 4-hour and 8-hour). However, when combined with the background concentration, the PECs were all less than 70%

of the relevant EQs (AEGL-1: 10-minute (19%), 30-minute (10%), 1-hour (7.3%), 4-hour (7.3%) and 8-hour (7.3%)). Therefore, no exceedance of AEGL-1 was predicted.

- **Short term NH_3:** the maximum PC (1.44 µg/m^3) was less than 10% of the short term EQS (0.058%) and therefore could be screened out as insignificant.

Annual testing

For this scenario, modelling results predicted:

- **Short term NO_2:** the maximum PC (22.6 µg/m^3) was more than 10% of the short term EQS (11%) and therefore could not be screened out as insignificant. However, concentrations inclusive of background (PEC) (72.2 µg/m^3) are less than 100% of the ES (36%) and so we are satisfied that the short term EQS will not be exceeded under this testing scenario.

- **Short term NO:** the maximum PC (43.1 µg/m^3) was less than 10% of the short term EQS (0.98%) and therefore could be screened out as insignificant.

- **AEGL-1:** PCs were above 1% of the relevant AEGL-1 for all exposure periods considered (10-minute, 30-minute, 1-hour, 4-hour and 8-hour). However, when combined with the background concentration, the PECs were all less than 70% of the relevant EQs (AEGL-1: 10-minute (25%), 30-minute (12%), 1-hour (9.1%), 4-hour (7.2%) and 8-hour (7.2%)). Therefore, no exceedance of AEGL-1 was predicted.

- **Short term NH_3:** the maximum PC (4.74 µg/m^3) was less than 10% of the short term EQS (0.19%) and therefore could be screened out as insignificant.

Annual PIT testing

For this scenario, modelling results predicted:

- **Short term NO_2:** the maximum PC (13.6 µg/m^3) was less than 10% of the short term EQS (6.8%) and therefore could be screened out as insignificant.

- **Short term NO:** the maximum PC (25.8 µg/m^3) was less than 10% of the short term EQS (0.59%) and therefore could be screened out as insignificant.

- **AEGL-1:** PCs were above 1% of the relevant AEGL-1 for all exposure periods considered (10-minute, 30-minute, 1-hour, 4-hour and 8-hour). However, when combined with the background concentration, the PECs were all less than 70% of the relevant EQs (AEGL-1: 10-minute (17%), 30-minute (9.2%), 1-hour (7.5%), 4-hour (6.4%) and 8-hour (6.4%)). Therefore, no exceedance of AEGL-1 was predicted.

- **Short term NH_3:** the maximum PC (2.84 µg/m^3) was less than 10% of the short term EQS (0.11%) and therefore could be screened out as insignificant.

Quinquennial testing

For these scenarios, the two tests were assumed to run concurrently involving all engines. The modelling results predicted:

- **Short term NO_2:** the maximum PC (13.6 µg/m^3) was less than 10% of the short term EQS (6.8%) and therefore could be screened out as insignificant.

- **Short term NO:** the maximum PC (25.8 µg/m^3) was less than 10% of the short term EQS (0.59%) and therefore could be screened out as insignificant.

- **AEGL-1:** PCs were above 1% of the relevant AEGL-1 for all exposure periods considered (10-minute, 30-minute, 1-hour, 4-hour and 8-hour). However, when combined with the background concentration, the PECs were all less than 70% of the relevant EQs (AEGL-1: 10-minute (17%), 30-minute (9.2%), 1-hour (7.5%), 4-hour (6.4%) and 8-hour (6.4%)). Therefore, no exceedance of AEGL-1 was predicted.

- **Short term NH_3:** the maximum PC (2.84 µg/m^3) was less than 10% of the short term EQS (0.11%) and therefore could be screened out as insignificant.

The Applicant has also modelled long term (annual) emissions from the site. For the testing scenarios, there are various different set-ups for engine operating profiles used in the modelling – please see the AQIA for more information. For the emergency operation scenarios, the model assumes all engines are run concurrently at 60% load.

The results presented below represent the maximum PC at any of the modelled receptors for the relevant pollutant species. This represents worst-case scenario as by definition, all other receptors have modelled PCs that are lower than the maximum.

- **NO:** the maximum PC (0.00505 µg/m^3) was less than 1% of the long term EQS (0.0016%) and therefore could be screened out as insignificant.
- **NO_2:** the maximum PC (0.0181 µg/m^3) was less than 1% of the long term EQS (0.045%) and therefore could be screened out as insignificant.
- **NH_3:** the maximum PC (0.00102 µg/m^3) was less than 10% of the long term EQS (0.0006%) and therefore could be screened out as insignificant.

Emergency scenarios

For emergency scenarios the Applicant has provided results for the site.

The results presented below represent the maximum PC at any of the modelled receptors for the relevant pollutant species. This represents worst-case scenario as by definition, all other receptors have modelled PCs that are lower than the maximum.

<u>1 hour outage</u>

- **Short term NO_2:** the maximum PC (13.6 µg/m^3) was less than 10% of the short term EQS (6.8%) and therefore could not be screened out as insignificant.

- **Short term NO:** the maximum PC (25.8 µg/m^3) was less than 10% of the short term EQS (0.59%) and therefore could be screened out as insignificant.

- **AEGL-1:** PCs were above 1% of the relevant AEGL-1 for all exposure periods considered (10-minute, 30-minute, 1-hour, 4-hour and 8-hour). However, when combined with the background concentration, the PECs were all less than 70% of the relevant EQs (AEGL-1: 10-minute (17%), 30-minute (9.2%), 1-hour (7.5%), 4-hour (5.8%) and 8-hour (5.6%)). Therefore, no exceedance of the AEGL-1 was predicted.

- **Short term NH_3:** the maximum PC (2.84 µg/m^3) was less than 10% of the short term EQS (0.11%) and therefore could be screened out as insignificant.

72 hour outage

- **Short term NO_2:** the maximum PC (13.6 µg/m^3) was less than 10% of the short term EQS (6.8%) and therefore could be screened out as insignificant.

- **Short term NO:** the maximum PC (25.8 µg/m^3) was less than 10% of the short term EQS (0.59%) and therefore could be screened out as insignificant.

- **AEGL-1:** PCs were above 1% of the relevant AEGL-1 for all exposure periods considered (10-minute, 30-minute, 1-hour, 4-hour and 8-hour). However, when combined with the background concentration, the PECs were all less than 70% of the relevant EQs (AEGL-1: 10-minute (17%), 30-minute (9.2%), 1-hour (7.5%), 4-hour (7.5%) and 8-hour (7.5%)). Therefore, no exceedance of the EQS was predicted.

- **Short term NH_3:** the maximum PC (2.84 µg/m^3) was less than 10% of the short term EQS (0.11%) and therefore could be screened out as insignificant.

Discussion of results and conclusions

Natural Resources Wales modelling specialists have audited the dispersion modelling and AQIA, carrying out check modelling and sensitivity analysis. We are in agreement with the modelling approach, the way the Applicant has used dispersion models, its selection of input data and use of background data. The assumptions underpinning the model have been checked and are reasonably precautionary.

The impact on air quality from the proposed testing and maintenance regime is the primary concern as this aspect of the operation is guaranteed to occur. The results show that for all engine testing, predicted impacts can either be screened out as insignificant or considered unlikely to cause an exceedance when assessed against the relevant EQS.

No exceedances of the AEGL-1 thresholds were shown for the individual engine tests or emergency operation scenarios (1-hour and 72-hour).

As previously explained in this document, the purpose of the engines is to provide back-up power in the event of a National Grid outage. This is not an expected scenario and the operator has effectively demonstrated in this application how risk of having to operate during an outage has been minimised as far as is reasonably practicable. For the short term EQS (hourly) to be breached, there would also need to be 19 1-hour outage events a year, which is considered highly unlikely.

Furthermore, in order for the above predicted impacts to occur, the Applicant has assumed that the highly unlikely scenario of emergency operation will coincide with the prevalence of the least favourable meteorological conditions from the 5 year data set modelled. We agree with the Applicant's conclusions that due to the conservative modelling approach, in the unexpected event that the engines are run for emergency purposes, impacts are expected to be better than modelled.

The draft permit includes controls to protect human health in the event of emergency operation. These include an Air Quality Management Plan (AQMP) which requires the

operator to notify NRW in the event of any emergency operation. The limits of the permitted activity specifically state that emergency generation shall cease or be reduced if there is credible information that there may be an immediate danger to human health.

Article 18 of the Industrial Emissions Directive 2010/75/EU requires that further measures are taken to control emissions if it is expected the EQS would be beached. However, because the likelihood of occurrence is low, we do not consider that the EQS is likely to be breached.

We do consider it necessary to impose improvement condition (IC) related to air quality. IC1 requires the Applicant to devise and submit for approval to Natural Resources Wales an Air Quality Management Plan (AQMP) to manage the impact of emissions from the Installation. This IC includes a requirement for the Applicant to consider co-ordination and co-operation arrangements for testing and maintenance activities with co-located backup facilities which may be operating at the same time.

IC6 requires the Applicant to undertake verification work to demonstrate that the engines fitted with SCR have emission levels which do not exceed those predicted in the air quality modelling. This is to ensure the abatement is performing as stated in the application.

Emission limits

We have decided that emission limits should not be set for the parameters listed in the permit. This is in line with the requirements for new MCPs that operate for less than 500 hours per year as set out in the MCPD.

For the 28 Data Hall engines (emission points A1-A28), the two Administration Building engines (emission points A29-A30) and the water treatment plant engine (A31) we have specified monitoring for Carbon Monoxide (CO) at a frequency of:

- After 3 times the maximum average annual operating hours have elapsed and no less frequent than every 5 years.

Monitoring for CO shall be carried out in accordance with the web guidance 'Monitoring stack emissions: low risk MCPs and specified generators.'[11]

Based upon the information in the application and the measures that will be imposed by the permit we are satisfied that the appropriate measures will be in place to protect air quality for the environment and human health.

10.2. Assessment of impact to surface and ground water

As detailed above in Section 9.3, containment measures are in place for potentially polluting substances associated with the storage of fuel and AdBlue. These comply with the requirements of CIRIA c736.

We have not included emissions limits or monitoring parameters for discharges of surface water from W1, as it is comprised of only clean uncontaminated run-off.

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent pollution of ground and surface water.

10.3. Fugitive emissions

The Applicant has identified the following potential fugitive emissions in their environmental risk assessment:

- Fugitive emissions to air from the storage of fuel; and
- Fugitive emissions to water from a leak or spill of potentially polluting substances.

The application details measures which will be in place for preventing and minimising fugitive emissions.

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise fugitive emissions and to prevent pollution from fugitive emissions.

[11] Monitoring stack emissions: low risk MCPs and specified generators

Permit condition 3.2.1 requires that emissions of substances not controlled by emission limits (i.e., fugitive emissions) shall not cause pollution. Condition 3.2.2 requires that a management plan shall be developed if pollution is subsequently identified.

10.4. Assessment of odour impact

No significant odour emissions are anticipated to be associated with this Installation. Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise the effects of odour.

10.5. Noise and vibration assessment

There are sensitive receptors within the vicinity of the Installation which include residential receptors.

The Applicant has submitted a noise impact assessment (NIA) with their application which uses noise modelling software SoundPlan version 8.2 to characterise the risk of noise emissions from the proposed installation on nearby receptors. The Applicant identified the following sources of noise in their NIA: testing and emergency operation of engines.

Noise modelling specialists at NRW have reviewed the NIA and agree with the assumptions underpinning the methodology used in the assessment. They agree with the Applicant's conclusions that predicted noise impacts as a result of the site are unlikely to cause an adverse impact at receptors in accordance with BS 4142[12]. The assessment predicts that the emergency scenario is associated with an exceedance

[12] BS 4142:2014+A1:2019: 'Methods for rating and assessing industrial and commercial sound'

of +8dB above background; however, the context presented in the report argues that the impact from the emergency scenario would be temporary and unlikely to occur regularly and therefore will not result in a significant impact: we agree with this assumption.

We have included Improvement Condition IC2 in the draft permit requiring the Applicant to conduct a noise monitoring survey or BS4142 noise assessment to confirm the source sound power levels and predictions made in the NIA – see Annex 1 for more information.

The application details measures which will be in place for preventing and minimising noise.

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent or where not practicable to minimise the effects of noise and vibration.

Condition 3.4.1 of the permit requires noise from the activities to be below that which could cause pollution outside the site. For testing and maintenance scenarios, we are satisfied that this will be sufficiently protective in conjunction with the measures described by the Applicant for minimising noise at the Installation.

11. Impact on European Sites, SSSIs and non-statutory sites

The Applicant has used 10km and 2km screening distance criteria to identify relevant protected conservation sites which could be at risk from the proposal. We are in agreement with the screening distances used.

A full assessment of the application and its potential to affect the identified sites has been carried out as part of the permit determination process. European Sites, Sites of Special Scientific Interest (SSSI) and non-statutory conservation sites will be discussed separately below.

11.1. European Sites

The following European Sites are located within 10 km of the Installation:

- Severn Estuary Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar (approximately 3.2 km to the South East of the Installation)
- River Usk SAC (approximately 3 km to the East of the Installation)

A Habitat Regulations Assessment (HRA) was completed to assess the potential to affect any of the sites identified. The assessment was completed using the air dispersion modelling results described in Section 10.1.

In light of the conclusions of an appropriate assessment and taking account of the advice received from NRW's protected sites advisors, it has been established that the project will not adversely affect the integrity of either of the European Sites listed above, taking into account any conditions or restrictions as applicable, either alone or in-combination with other plans and projects. The full Habitats Regulations Assessment (HRA) is available to view on the public register, see here: HRA assessment.

11.2. Sites of Special Scientific Interest (SSSI)

The following SSSIs are located within 2 km of the Installation:

- Gwent Levels – St Brides (approximately 300 m from the Installation at closest point, lying to the South and West of the site)

As a Section 28G Authority as defined in the Countryside Rights of Way Act 2000 permitting teams within NRW has a legal duty, under Section 28I of the Wildlife and Countryside Act 1981, to consult with NRW for formal advice when permitting an activity which has been determined to be likely to damage the features of a SSSI.

To determine if consultation is required, a SSSI Assessment was completed using the air dispersion modelling results discussed in detail in Section 10.1. The assessment concluded that the proposed permission is not likely to damage any of the flora, fauna

or geological or physiological features which are of special interest, hence a consultation was not required.

A copy of the assessment is available to view on the public register, please see here: SSSI assessment.

11.3. Non-statutory conservation sites

The following relevant non-statutory sites are located within 2 km of the Installation:

- LG Duffryn Site 2 SINC
- LG Duffryn Site 1 SINC
- Duffryn Pond SINC
- Cwm Pensidan SINC
- Various Ancient Woodland (6 discrete areas)

The only impact pathway to these sites as a result of this application is via emissions to air which includes NO_x and NH_3. The Applicant has provided dispersion modelling to assess the impact of NO_x and NH_3 emissions as a result of the proposed Installation on non-statutory sites.

Predicted emissions have been assessed against a short term critical level of 200 µg/m^3 and long term critical level of 30 µg/m^3 for NO_x and long term critical level of 1 µg/m^3 for NH_3. No assessment of nutrient nitrogen and acid deposition has been completed as there are no site relevant critical loads for the sites identified available. Refer to Section 10.1 for further details of the modelling, our audit and the relevant guidance for determining significance of results.

The predicted impact of the testing regime on non-statutory sites has been presented. This has shown that the modelled results for the short term and long term NO_X and long term NH_3 are below 100% of the associated critical levels and are therefore considered not significant.

For emergency scenarios, the modelled results for the short term and long term NOx are below 100% of the critical level for short-term and long-term concentrations for the 1- hour emergency scenario. However, for the 72-hour scenario the results show that the short term NO_x PCs are predicted to exceed 100% of the short term critical levels at some of the non-statutory sites, the worst impacted site being 'Dyffryn LG Site 2 SINC' (290 µg/m^3 representing 145% of the short term critical level). These results indicate the possibility of a significant breach of the short term critical level in the event of a 72-hour outage.

As already discussed in detail in Section 10.1, the predicted impacts in the modelling are not expected to occur due to the conservative approach of the modelling. Furthermore, the likelihood of a 72-hour outage event is considered rare. There are controls in the permit to protect the environment in the event the engines are used in an emergency scenario.

Based upon the information in the application we are satisfied that there will be no significant pollution at the non-statutory conservation sites identified.

12. The Permit Conditions

12.1. 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 MCPD requirement to monitor CO.

For emissions to air, the methods for periodic monitoring are in accordance with web guidance 'Monitoring stack emissions: low risk MCPs and specified generators'[13] and in line with BAT requirements set out in the MCPD.

12.2. Reporting

We have specified the reporting requirements in Schedule 4 of the Permit to ensure data is reported to allow timely review by Natural Resources Wales. This reporting will

[13] Monitoring stack emissions: low risk MCPs and specified generators

help to ensure compliance with permit conditions and to monitor the efficiency of material use and waste recovery at the Installation.

12.3. Raw Materials

We have specified limits and controls on the use of raw materials and fuels.

The permit allows the Applicant to accept HVO (via Table S2.1). This table specifies that HVO accepted at the site must comply with EN15940/590/2869/14214. See Section 7.2 for more information.

The permit also allows the Applicant to accept mineral lube oil (via Table S2.1).

12.4. Improvement conditions

Based on the information on the application, we consider that we need to impose improvement conditions. Details of the improvement conditions used can be found at Annex 1.

Justification for the inclusion of all the improvement conditions is given throughout this document, with the exception of:

- Improvement Condition 3, which is included to verify the performance of the Applicant's proposed engine testing and maintenance regime; and
- Improvement Condition 7, which is included to require the Applicant to provide a climate change risk assessment that considers current and future climate change projections. This is new requirement of all bespoke installations permits granted after 1st July 2025.

13. OPRA

The agreed OPRA score at the Installation is 102. This will form the basis for ongoing subsistence fees.

ANNEX 1: Improvement Conditions

We have specified the following Improvement Conditions in the permit:

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	The operator shall develop and submit a site-specific Air Quality Management Plan (AQMP) in conjunction with the Local Authority which identifies the emergency operating conditions (grid failure) when Local Air Quality may be adversely impacted by emissions to air from the installation. This shall include but not be limited to the following considerations: • predicted potential impacts indicated by the air modelling at individual sensitive human receptors; • timescales for response measures; • how local conditions during a grid failure might influence the response required, for example meteorological conditions or time of day; • contingency for how the response will be carried out in the event scenario i.e. loss of power; • co-ordination and co-operation testing and maintenance arrangements with co-located backup facilities which may be operating at the same time; and • timescales for continued review of the management plan. The agreed AQMP shall be submitted to Natural Resources Wales for approval.	29/07/2026 unless otherwise agreed in writing with NRW
IC2	Following successful commissioning and establishment of routine steady operation, the Operator shall undertake a BS 4142:2014+A1:2019 noise impact assessment following guidance set out in Noise and Vibration Management: Environmental Permits and Method implementation document (MID) for BS 4142, to demonstrate that impacts do not exceed those specified in the Noise Impact Assessments submitted with the application dated 02/08/2024 and 09/06/2025.	No more than 3 months from the date of completion of engine commissioning unless otherwise agreed in writing with NRW

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC3	The operator shall produce a report outlining the maintenance and operating regime following the first year of operation after permitting. This shall include but is not limited to the following: • An update on the control systems used to carry out the testing of the generators and how these have been used to minimise emissions and; • Any additional improvements that have been identified to reduce emissions during the maintenance testing and operation of the generators. This should include timescales for the implementation of the improvements. The operator shall submit this report in writing to Natural Resources Wales.	29/04/2027 unless otherwise agreed in writing with NRW
IC4	The operator shall update the Diesel Spillage and Emergency Response Procedures submitted with application reference PAN-026552 and submit them to Natural Resources Wales for approval by the date specified.	29/04/2026
IC5	The operator shall update its existing Environment Management System to incorporate all the activities now covered by this permit in accordance with BAT 1 of the BAT Conclusions for Large Combustion Plant, under Directive 2010/75/EU of the European Parliament and of the Council. The Environmental Management System shall incorporate the Diesel Spillage and Emergency Preparedness Procedures referred to in IC5. The operator shall submit the updated Environment Management System to Natural Resources Wales for approval by the date specified.	29/04/2026

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC6	The Operator shall undertake verification work to demonstrate that engine exhaust emission levels for the engines fitted with Selective Catalytic Reduction (SCR) for NOx control do not exceed those outlined in the application air quality assessment for oxides of nitrogen (NO plus NO_2 expressed as NO_2) and for ammonia (NH_3) A detailed plan of the verification work to be carried out shall be submitted to NRW for approval. A written report of the work and its results shall be submitted to Natural Resources Wales for approval. This shall: • demonstrate the performance stated in the application, • demonstrate that NO_X emissions performance stated in the application (190 mg/m^3 @ reference conditions 15% oxygen) is achieved for all operational scenarios, including short duration operation of 10-15 minutes (as an average over that operating period from cold start-up) • cover performance for any fuels utilised by the engines on site (diesel and Hydrotreated Vegetable Oil) If verified emission levels are higher than those predicted in the application, include an assessment of the most suitable techniques to improve performance to achieve those levels, an estimate of the cost and a proposed timetable for their implementation. It is anticipated that the verification will include measurements of emissions from the engines once installed, in which case such measurements shall meet the MCERTs standard. If verification is possible by other means (e.g. by using manufacturers' data) then this should be justified in the verification plan referred to above.	No more than 12 months from the date of completing of engine commissioning unless otherwise agreed in writing with NRW
IC7	The operator shall submit to Natural Resources Wales a climate change risk assessment that includes current and future climate change projections. The assessment must be site specific and uses the most up to date climate projections to: • plan and manage the risks associated with a 2°C rise by 2050 • assess the risks associated with a 4°C rise by 2100 • avoid lock-in to future proof your site • consider internal, external and consequential climate change impacts • develop a plan to regularly update the assessment based on new data or emerging climate trends	01/03/2026

ANNEX 2: Consultation Reponses

1. Advertising and consultation on the Application

The application has been advertised and consulted upon in accordance with Natural Resources Wales Public Participation Statement. Responses to this consultation and how we have taken the consultation responses into account in reaching our draft decision is summarised in this Annex.

Consultation Responses from Statutory and Non-Statutory Bodies

Response Received from Public Health Wales	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
During emergency scenarios, modelled NO_2 concentrations exceed short-term health-based standards. Although the applicant has implemented some air quality controls, these measures have not fully mitigated the risks associated with emergency scenarios, where NO_2 levels remain a concern. **We recommend that this application is not granted without the Regulator being fully satisfied that stringent operational controls are in place to minimise adverse impacts upon air quality.**	Section 10.1 of this document explains how we have assessed the risk of air quality impacts from planned testing and emergency operation. The permit contains stringent controls to protect the environment and human health. These will include the requirement to produce and maintain an Air Quality Management Plan (AQMP), as well as a number of controls on the Limits of the Specified Activity – see Table S1.1 of the draft permit for more detail.
The applicant notes that in an appropriately designed SCR system that is functioning as it should, there should be little, if no ammonia slip. However, if not functioning appropriately, the undesirable phenomenon results from too much ammonia (NH_3) being injected to the system. **The applicant notes that ammonia slip was assessed based on NH_3 values supplied by the manufacturer. The Regulator should be satisfied that the ammonia slip is appropriately**	We have included an Improvement Condition (IC6) in the permit requiring the Applicant to submit evidence to us within three months of the date of issue of the permit to demonstrate that the engine performance parameters for emissions of NO_x and ammonia control via the SCR system are as stated in the application.

accounted for and will not result in exceedances of protective guidance values such as Acute Exposure Guideline Levels (AEGLs).	
The results of the modelled assessment based on monthly, quarterly and annual testing regimes predict no exceedances for any AQS or AEGL. However, the results predict exceedances for the 1-hour AQS and the 10-minute AEGL-1 for NO2, as a result of each quinquennial test. It is noted that the quinquennial tests are based on a worst-case scenario (all engines running together). It is noted by the applicant that it is unlikely that these engines would be running together – they are likely to be grouped into smaller cells and thereby claimed to result in lower emissions. It is noted that all generators may be operated for additional planned maintenance of which NRW will be informed of in advance. **We recommend that the Regulator seeks to clarify the 'grouping' of generators for such scenarios. We advise that the Regulator seeks to satisfy themselves that the testing and maintenance scenarios are appropriately assessed, and the conclusions drawn are appropriate. Appropriate mitigation measures should be in place to reduce any short- or long-term air pollution impacts.**	The Applicant's revised version of the AQIA (version 7) predicts no exceedance of the 1-hour AQ or AEGL-1 (10 minute) for NO_2 associated with the quinquennial test. This version of the AQIA, along with all previous versions submitted to us, has been audited by NRW air modelling specialists who agree with the conclusions presented. The permit contains stringent controls to protect the environment and human health. These will include the requirement to produce and maintain an Air Quality Management Plan (AQMP).
The application states that there is a potential for localised fugitive emissions to air of hydrocarbon vapour from the diesel fuel storage tank breather vents. Little information is provided on this. **We encourage the Regulator to seek clarity on this matter to ensure this will not adversely affect the locale.**	Conditions 3.2.1, 3.2.2 and 3.2.3 of the permit require the Application to prevent the release of substances that are not released via emission points via a number of mechanisms. The application states that the company will extend its existing Environmental Management System to include Newport Campus once

	the Installation is operational. We have included an Improvement Condition (IC6) in the permit requiring the Applicant to submit evidence to us within three months of the date of issue of the permit to demonstrate that their EMS has been reviewed and updated to include the site. This IC requires that the Diesel Filling Procedure and Emergency Response Procedure, submitted with the application, are updated and included in the EMS. We have not sought additional information from the Applicant on the on this as the low vapour pressure of diesel and HVO at room temperature means that the potential for volatilisation of these fuels is very low. Therefore, we consider the above control measures - employed by the Applicant via their EMS and imposed in the permit by the above described conditions – will satisfactorily control and manage fugitive emissions from the fuel tanks.
A quantitative cumulative impacts assessment has not been conducted in the application to include the combined / cumulative emissions from other premises activating generators during grid failures. **As the applicant's assessment has not accounted for cumulative impacts from other premises activating generators during grid failures, we would strongly recommend that this assessment is undertaken to understand the risk to public health.**	The Applicant's revised version of the AQIA (version 7) predicts no exceedance any of the human health EQSs or AEGL standards. This version of the AQIA, along with all previous versions submitted to us, has been audited by NRW air modelling specialists who agree with the conclusions presented. Therefore, for this particular application, we do not consider it is necessary to request any further assessments from the Applicant.
The applicant cites National Grid reliability and conservative modelling assumptions as key mitigation points. The applicant offers a collaborative approach with other Site operators to avoid simultaneous	The risk of a regional outage resulting in numerous back-up engines being used at one time is considered an extremely rare event. The use of the engines in an emergency scenario will be treated

testing of generators, as a mitigation strategy. **We recommend that the Regulator is satisfied that such collaboration is possible and that controls can be implemented to reduce emissions.**	as an serious incident. The permit includes strict controls including limits on use of the engines should a risk of immediate danger to human health be identified from the use of the back-up engines. An Improvement Condition (IC1) requires the Applicant to consider *"co-ordination and co-operation arrangements with operator(s) of other co-located backup facilities which may be operating at the same time"* in their AQMP.
Oil and fuel present onsite will be stored in belly tanks located underneath each of the 28 emergency back-up generators associated with the data centres. Each of these tanks are integrally bunded and has a capacity of 40,000 l. The two administrative building generators also have diesel belly tanks, these are sized 6,050 l. The water treatment generator has a standalone tank sized 4,000 l. The two diesel fuelled fire pumps will also have storage tank associated with them. The Site's aggregated fuel storage capacity is c. 1,136,100 l. It is noted that ahead of operation of the Site, Microsoft will develop Site specific fuel filling and emergency spill response procedures. Our main concern with sites that store fuels is the risk of fire. Where fires do occur, they can present a potentially serious risk to public health and the environment. **In view of the potential local public health impact of a fire and to minimise risks, the Regulator must ensure that the operations are managed in accordance with current sector guidance for storage of fuels.**	We have reviewed the Applicant's procedures for control of potentially polluting liquids and are satisfied that they comply with all relevant guidance for the containment of such hazards. Conditions 3.2.1, 3.2.2 and 3.2.3 of the permit require the Application to prevent the release of substances that are not released via emission points via a number of mechanisms. The application states that the company will extend its existing Environmental Management System to include Newport Campus once the Installation is operational. We have included an Improvement Condition (IC5) in the permit requiring the Applicant to submit evidence to us within three months of the date of issue of the permit to demonstrate that their EMS has been reviewed and updated to include the site. This IC requires that the Diesel Filling Procedure and Emergency Response Procedure, submitted with the application, are updated and included in the EMS.
The SCR systems will utilise a series of above ground Ad Blue storage	We have reviewed the Applicant's procedures for control of potentially

tanks, there will be 28 tanks associated with each generator, each sized c. 2,200 l useable. All bulk Ad Blue storage tanks will have suitable secondary containment installed including bunds with 110% containment capacity of the primary tanks, as appropriate. The Site operatives propose to monitor the Ad Blue levels daily and visual inspections will be carried out when appropriate. The urea tanks are complete with a contents gauge, overfill and bund leak alarm. When Ad Blue is delivered to Site, Microsoft expects contractors to be equipped with spill response equipment and to follow their own response plans. Any handling and storage of Ad Blue on Site will be maintained by Microsoft in accordance with the material safety data sheet (MSDS). **The Regulator must ensure they are satisfied that the operations will be appropriately managed in accordance with current sector guidance with appropriate mitigation measures in place for spills and leaks to avoid any offsite impacts (i.e. contamination of watercourses).**	polluting liquids and are satisfied that they comply with all relevant guidance for the containment of such hazards. Conditions 3.2.1, 3.2.2 and 3.2.3 of the permit require the Application to prevent the release of substances that are not released via emission points via a number of mechanisms. The application states that the company will extend its existing Environmental Management System to include Newport Campus once the Installation is operational. We have included an Improvement Condition (IC6) in the permit requiring the Applicant to submit evidence to us within three months of the date of issue of the permit to demonstrate that their EMS has been reviewed and updated to include the site. This IC requires that the Diesel Filling Procedure and Emergency Response Procedure, submitted with the application, are updated and included in the EMS. IC5 requires the Applicant to update the Diesel Spillage and Emergency Response Procedures.
A Noise Impact Assessment (NIA) is cited in the application. The NIA has found that under “Normal Operation”, noise from the Development is 5 dB or more below the background levels during both day and night periods at all locations, resulting in ‘no impact’. Under the “Generator Testing” scenario the rating levels do not exceed more than 5 dB below the background levels at all noise sensitive receptors during daytime. However, Under the “Emergency Mode” scenario, the rating levels exceed the background levels at Blacksmiths Way and The Stud	We have included an Improvement Condition (IC2) in the permit requiring the Applicant to undertake a BS 4142:2014+A1:2019 noise impact assessment following guidance set out in Noise and Vibration Management: Environmental Permits and Method implementation document (MID) for BS 4142, to demonstrate that impacts do not exceed those specified in the Noise Impact Assessment submitted with the application. Conditions 3.4.1 and 3.4.2 of the permit require the Applicant to

Farm by 4 dB during the night only and Powis Close during daytime by 1 dB and night-time by 4dB. This scenario is based on a power failure emergency event and is stated that this does not represent the typical operation of the Proposed Development. The applicant has applied the upper end of the guide range due to the assumption that due to the nearby buildings being relatively noisy industrial or commercial uses, they are expected to be of lower noise sensitivity. Overall, the applicant concludes that no significant effects are anticipated from the Proposed Development in the three assessed scenarios. **In view of this and the proximity of the nearest receptors, the Regulator should seek to be satisfied that the NIA has adequately assessed impacts on noise sensitive receptors during testing and emergency scenarios along with the cumulative impacts from nearby generators (e.g. Vantage Data Centre) during a grid failure that would affect both sites. The Regulator should be satisfied that management controls are implemented, and any complaints are addressed promptly in accordance with a complaints procedure.**	control emissions of noise from the site such that they do not cause pollution, investigate and resolve noise complaints, and devise and implement a Noise Management Plan if required.
No material fugitive emissions to water or land are expected from the permitted activity. The only anticipated, potentially significant fugitive emission to surface water from the permitted operation would be in the event of a leak or spill from the above ground fuel tanks or Ad Blue tanks. The application states that the Site will develop emergency response procedures in place in the event of a release of oil, diesel, or Ad Blue, processes for the planning for such eventualities and checklists	We have reviewed the Applicant's procedures for control of potentially polluting liquids and are satisfied that they comply with all relevant guidance for the containment of such hazards. Conditions 3.2.1, 3.2.2 and 3.2.3 of the permit require the Application to prevent the release of substances that are not released via emission points via a number of mechanisms.

to audit the response in case such an event occurs. **The Regulator should be satisfied that the emergency protocols in place are appropriate.**	The application states that the company will extend its existing Environmental Management System to include Newport Campus once the Installation is operational. We have included an Improvement Condition (IC5) in the permit requiring the Applicant to submit evidence to us within three months of the date of issue of the permit to demonstrate that their EMS has been reviewed and updated to include the site. This IC requires that the Diesel Filling Procedure and Emergency Response Procedure, submitted with the application, are updated and included in the EMS.
Minimal waste is expected. Waste generated from the permitted activities will be mainly waste lubricating oil and diesel fuel waste. Waste will be generated from routine cleaning and disposal of expired Ad Blue. The Ad Blue will be taken offsite by the subcontractor and a waste transfer note obtained. **We recommend a competent and licensed contractor be pre-agreed in order to dispose of any waste responsibly.**	Conditions 1.4.1 and 1.4.2 of the permit require the Applicant to dispose of wastes generated on site in a manner which minimises its impact on the environment and to review these appropriateness of these procedures at least every four years.
Microsoft operates environmental management system (EMS) aligned to the principles of ISO 14001. The EMS will be reviewed and updated to include the Site once operational. **We recommend the Regulator is satisfied with the suggested EMS before operation.**	The Applicant has submitted a summary of the contents of its existing Environmental Management System (EMS) which indicates that it aligns with the requirements of ISO14001:2015 and BAT Conclusion 1 of the Large Combustion Plant BRef. We have included Improvement Condition (IC6) in the permit requiring the Applicant to submit evidence to us within three months of the date of issue of the permit to demonstrate that their EMS has been reviewed and updated to include the site.

We received no other responses to the consultation from our statutory consultees or members of the public or any other interested parties.

2. Advertising and consultation on the draft decision

Our draft decision has been advertised and consulted on in accordance with requirements under the Industry Emissions Directive. Responses to this consultation and how we have taken consultation responses into account in reaching our final decision is summarised in this Annex.

We received no responses to the consultation on the draft decision.