Newbridge Energy Limited (Blazers Fuels) Draft Decision Document

Substantial variation

The variation number is: PAN-005141/V002

The Applicant / Operator is: Newbridge Energy Limited

The Facility is located at: Blazers Fuels, Brickfield Lane, Denbigh Road, Ruthin, Denbighshire, LL15 2TN

Subject to conditions we are minded to issue the variation for Blazers Fuels operated by Newbridge Energy Limited. The variation number is PAN-005141/V002.

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.

Regulation 34 EPR permit review

In accordance with regulation 34 of the Environmental Permitting (England and Wales) Regulations 2016 ('EPR') we have conducted a permit review and concluded a further variation is required.

Regulator initiated variation

In accordance with regulation 20 of the EPR we have varied the permit as detailed in this document in addition to the variation applied for by the Applicant.

Purpose of this document

This decision document:

- explains how the application has been determined
- explains the regulation 37 EPR permit review
- explains the regulation 20 EPR regulator initiated variation
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Structure of this document

- Table of contents
- Glossary of acronyms and definitions used in this document
- Key issues
- Annex 1 the consultation and web publicising advertising responses
- Annex 2 Improvement Conditions
- Annex 3 Pre-operational measures

Table of Contents

Glossary of acronyms and definitions used in this document

ADMS – Atmospheric Dispersion Modelling System

AQMA – Air Quality Management Area

BAT – Best Available Technique(s)

CERC – Cambridge Environmental Research Consultants

CHP – Combined Heat and Power

CO – carbon monoxide

DCC – Denbighshire County Council

DD – Decision Document

ELV – Emission limit value

EMS – Environmental Management System

EPR – Environmental Permitting (England and Wales) Regulations 2016

ES – Environmental Standard

HRA – Habitats Regulations Assessment

HSE – Health and Safety Executive

ISO14001 – International Organisation of Standardization standard for Environmental Management Systems

NOx – Oxides of nitrogen (NO and NO_2 expressed as NO_2)

NRW – Natural Resources Wales

MCERTS – Monitoring Certification Scheme

MCP – Medium Combustion Plant

MCPD – Medium Combustion Plant Directive

MP – Member of Parliament

MS – Member of the Senedd

OGN – Operational Guidance Note

OGN200 – Operational Guidance Note 200 – Habitats Regulations Assessment of Projects

PC – Process Contribution

PEC – Predicted Environmental Concentration

PHW – Public Health Wales

PM – Particulate matter

PPS – Public Participation Statement

PR – Public register

RD – Regulatory Decision

RGN – Regulatory Guidance Note

RGS – Regulatory Guidance Series

SAC – Special Area of Conservation

SCADA – Supervisory control and data acquisition

SG – Specified Generator

SGN – Sector Guidance Note

SMNR – Sustainable Management of Natural Resources

SOP – Standard operating procedure

SWIP – Small Waste Incineration Plant

SPA – Special Protection Area

SSSI – Site of Special Scientific Interest

TGN – Technical Guidance Note

TVOC – Total volatile organic compounds

VOC – Volatile organic compound

Units:

µg/m^3 – microgram per cubic metre

keq/ha/yr – kiloequivalents per hectare per year (measure of annual acid deposition)

kg – kilogram

kgN/ha/yr – kg nitrogen per hectare per year (measure of annual nitrogen deposition)

km – kilometre

m – metre

mg/m^3 – milligram per cubic metre

MW – megawatt

MWth – megawatt thermal

Key issues of the decision

1 Our decision

Based on the information currently available to us we are currently minded to issue a varied permit to the Applicant. This would, if issued, allow it to operate the regulated facility, subject to the conditions in the permit.

This is a draft decision document, which accompanies a draft permit.

It explains how we have considered the Applicant's Application, reviewed the permit and conducted a further variation and why we have included the specific conditions in the draft permit we are proposing to issue to the Applicant. It is our record of our decision-making process, to show how we have taken into account all relevant factors in reaching our position. Unless the document explains otherwise, we have accepted the Applicant's proposals.

The document is in draft at this stage, because we have yet to make a final decision. Before we make this decision we want to explain our thinking to the public and other interested parties, to give them a chance to understand that thinking and, if they wish, to make relevant representations to us. We will make our final decision only after carefully taking into account any relevant matter raised in the responses we receive. Our mind remains open at this stage: although we believe we have covered all the relevant issues and reached a reasonable interim conclusion, our final decision could be affected by any information that is relevant to the issues we have to consider. However, unless we receive information that leads us to alter the conditions in the draft Permit, or to reject the Application altogether, we will issue the Permit in its current form.

In this document we frequently say "we have decided". That may give the impression that our mind is already made up; but as we have explained above, we have not yet done so. The language we use enables this document to become the final decision document in due course with no more re-drafting than is absolutely necessary.

We try to explain our decision as accurately, comprehensively and plainly as possible. Achieving all three objectives is not always easy, and we would welcome any feedback as to how we might improve our decision documents in future. A lot of technical terms and acronyms are inevitable in a document of this nature: we provide a glossary of acronyms near the front of the document, for ease of reference.

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

This Application is to add to the existing permit the operation of a regulated facility which is subject principally to the Environmental Permitting Regulations 2016 (EPR), Medium Combustion Plant Directive (MCPD) and Specified Generator (SG) regulations found in Schedule 25A and 25B of EPR respectively.

The existing permit was reviewed to ensure it remains up to current standards and continues to provide the appropriate environmental and health safeguards. The review confirmed that additional measures are needed to ensure appropriate standards are met.

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

2 How we reached our decision

2.1 Receipt of Application

The Application was accepted as duly made on 29 September 2021. This means we considered it was in the correct form and contained sufficient information for us to

begin our determination, but not that it necessarily contained all the information we would need to complete that determination.

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

2.2 Consultation on the Application

We carried out consultation on the Application in accordance with the Environment Permitting Regulations (EPR), our statutory Public Participation Statement (PPS) and our Regulatory Guidance Note (RGN) 6 for Determinations involving Sites of High Public Interest.

We advertised the Application by a notice placed on our Consultation Hub, which contained all the information required by the EPR, including advising people where and when they could see a copy of the Application. The consultation started on **25/10/2021** and ended on **22/11/2021.** A copy of the Application and all other documents relevant to our determination are available for the public to view. Anyone wishing to see these documents could arrange for copies to be made available.

We also directly notified via E-mail known interested parties of the live consultation, including local councillors, Members of the Senedd and local interested parties who had previously shown an interest in activity at the site. We also used our social media channels (Facebook and Twitter) to advertise the consultation.

We sent copies of the Application to the following bodies, which includes those with whom we have “Working Together Agreements”:

- **Public Health Wales**
- **Denbighshire County Council – planning department**
- **Denbighshire County Council – environmental health**
- **Health and Safety Executive**

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

Public Health Wales requested the consultation period be extended to enable them to provide comments, we agreed to the extension and comments were received on 8th December 2021. A response was also received from Denbighshire County Council (environmental health) on 8th December 2021 following us extending the consultation period by 14 days. Despite reminders, no responses were received from Health and Safety Executive or Denbighshire County Council (planning department).

Further details along with a summary of consultation comments and our response to the representations we received can be found in Annex 1. We have taken all relevant representations into consideration in reaching our determination.

2.2.1 Draft Permit Consultation

We are now carrying out a consultation on our draft decision.

2.3 Requests for Further Information

In order for us to be able to consider the Application duly made, we needed more information. We requested further information relating to assessment of impact on Air Quality and best available techniques (BAT) assessment. Upon receipt of this information, we were able to consider the application Duly Made.

Further information was also requested by way of a Schedule 5 Notice:

- The first Schedule 5 Notice requested information regarding the BAT assessment and was sent on 17/11/2021 with a final response date of 10/01/2022. The additional information supplied satisfied the requirements of the Schedule 5 notice. One procedure referred to in the notice has been requested via an improvement condition in the permit (see below).

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

3 The Legal Framework

Both the Applicant's variation and the Regulator initiated variation will be issued under Regulation 20 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

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

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

Environment Wales Act 2016 – Biodiversity and resilience of ecosystems duty

Section 6 of the Environment Wales Act 2016 requires that we seek to maintain and enhance biodiversity in the exercise of our functions, and in so doing promote the resilience of ecosystems, in a manner that is consistent with the proper exercise of our functions. NRW is satisfied that in this case we have taken into account and had due regard to this duty in so far as it is consistent with the function of determining an application for an EPR permit.

Well-Being of Future Generations (Wales) Act 2015

Natural Resources Wales is satisfied that this decision is consistent 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.

In particular, Natural Resources Wales acknowledges that the principles of sustainable management include making appropriate arrangements for public participation in decision making, taking account of all relevant evidence and gathering evidence in

respect of uncertainties, taking account of the short, medium and long term consequences of actions and taking account of the resilience of ecosystems.

Natural Resources Wales further acknowledges that is it an objective of sustainable management to maintain and enhance the resilience of ecosystems and the benefits they provide and, in so doing meet the needs of present generations of people without compromising the ability of future generations to meet their needs and contribute to the achievement of the well-being goals in section 4 of the Well-being of Future Generations (Wales) Act 2015.

Natural Resources Wales is satisfied that on the evidence the short, medium and long term consequences of granting a permit variation for the operation of this facility will not affect the resilience of ecosystems and is consistent with the well-being goals.

We have also had regard to the Clean Air Plan for Wales 2020 and consider that our decision complies with the Plan, and that no additional or different conditions are appropriate for this Permit.

4 The Facility

4.1 Description of the Facility and related issues

4.1.1 The permitted activities

The Facility is subject to the EPR because it carries out activities as described in Schedule 25A and Schedule 25B of the EPR as well as an activity listed in Part 2 of Schedule 1 of the EPR:

- Chapter 5, Section 5.1 Part B (a)(v) The incineration in a small waste incineration plant (SWIP) with an aggregate capacity of 50 kg or more per hour of the following waste: (v) wood waste with the exception of wood waste which may contain halogenated organic compounds or heavy metals as a result of treatment with wood preservatives

This Applicant's variation is to add one combined heat and power (CHP) biomass boiler to the permit and therefore the site will be permitted to operate a total of two 5.2 MW thermal input CHP biomass boilers as one is already permitted. Both units are identical in make and model, however the existing unit uses waste wood and virgin

wood as fuel and the new unit will use only virgin wood as fuel. The existing unit is therefore permitted as a SWIP, an existing Medium Combustion Plant (MCP) and Tranche B Specified Generator (SG). Whereas the new unit is permitted as a new MCP and Tranche B SG and not a SWIP as virgin wood is not considered as waste.

A regulation 37 EPR permit review was conducted leading to a Regulator initiated variation in accordance with regulation 20 of EPR.

Natural Resources Wales (NRW) took the following actions:

- Reviewed the storage of fuel used in the existing unit to ensure it meets the required appropriate standards
- Added the two emergency vents for the existing unit to the emissions table in the permit and included a requirement to notify NRW when used
- Ensured the abatement system used for the existing unit is specified within the permit

Unless otherwise specified within this document we have not reviewed any other aspects of the operation of the existing combustion unit.

The existing plant is classed as an existing MCP as put into operation prior to 20 December 2018. The new plant is classed as a new MCP as put into operation after 20 December 2018. ‘Put into operation’ means the plant being fired up to its full load with its design fuel. Both plant generate electricity and are therefore SGs, they are classed as Tranche B as they are not classed Tranche A.

4.1.2 The Site

The site is located north west of Ruthin town centre, situated east of the A525 and north of the Ruthin north link road, indicated by the maps below. The area south of the site are the outskirts of Ruthin and therefore predominantly residential, with Ruthin Farmers Auction south west of the site. The ‘Glasdir’ housing estate is located south of the site, with the closest residential receptor located approximately 198 m from the location of the closest stack. Clifford Jones Timber facility is located immediately adjacent east of the site. The wider area north and west of the site is predominantly rural, with industrial units immediately surrounding the north and east of the site. The two stack locations are:

- Existing unit stack: coordinates: X (Easting) 311633.7, Y (Northing) 359010.3

- New unit stack: coordinates: X (Easting) 311601.7, Y (Northing) 359022.2

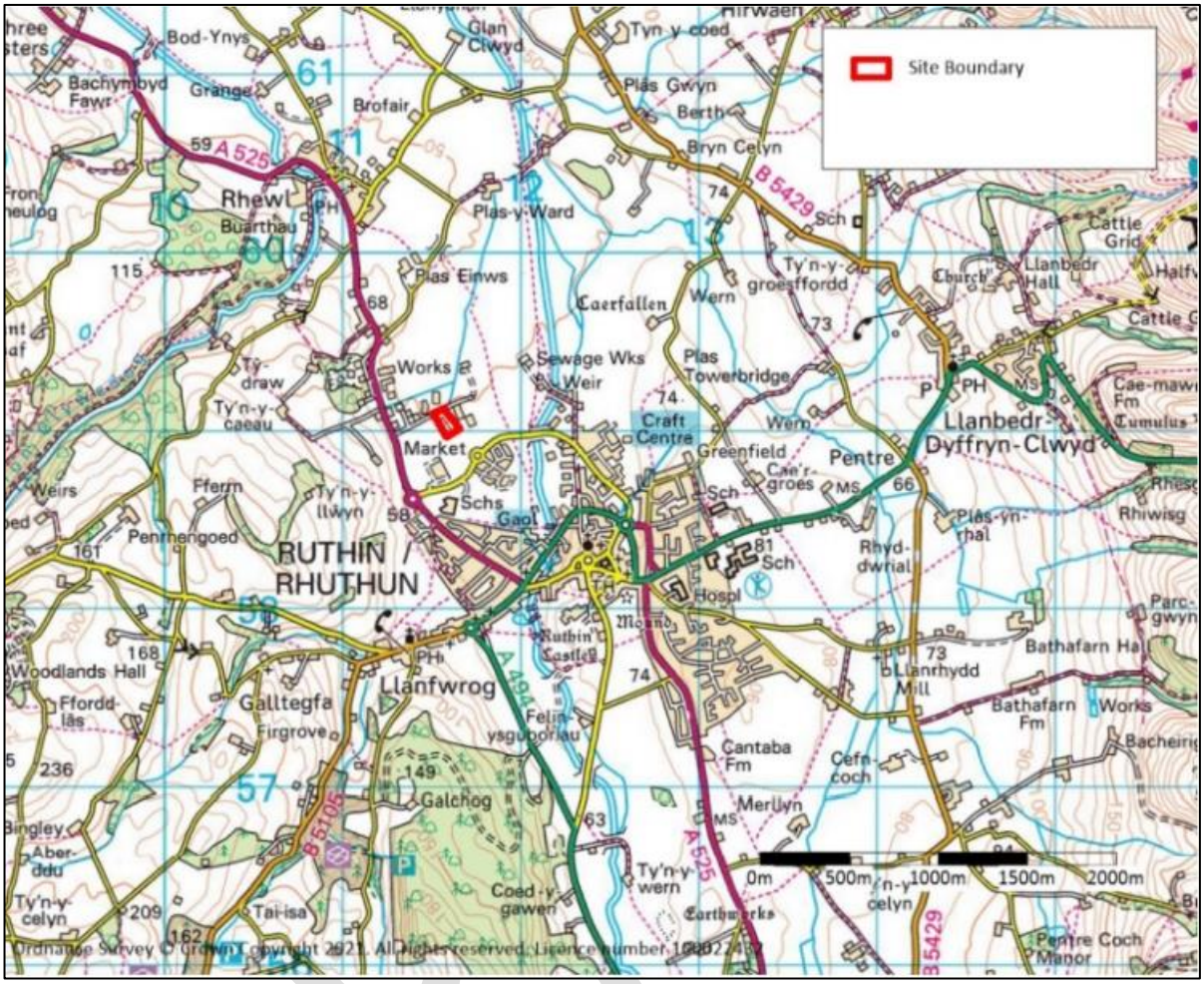

Figure 1: Map of site location taken from document reference: R2298D-R07-v2.

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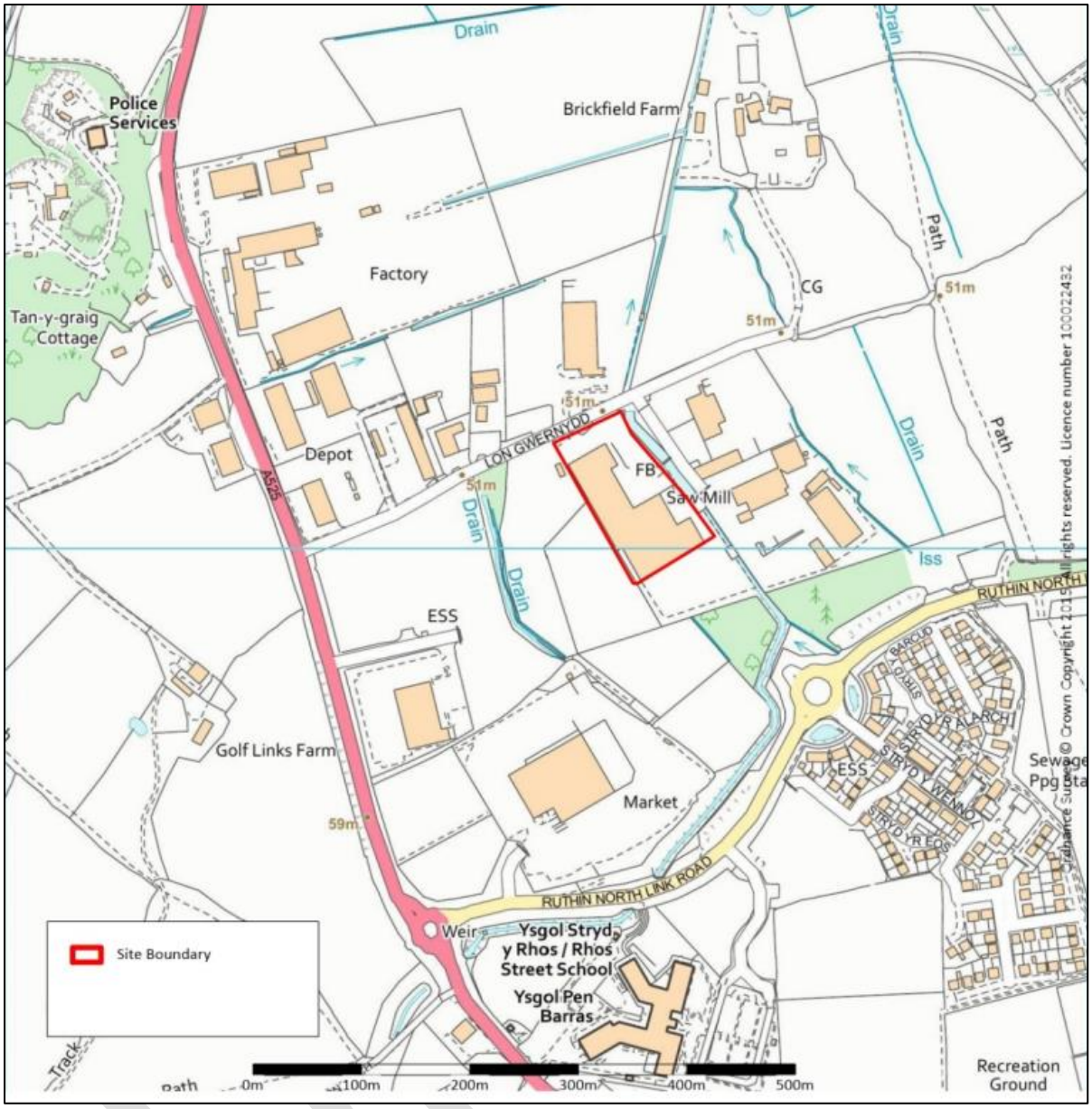

Figure 2: Map of site location taken from document reference: R2298D-R07-v2.

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There is a brook that runs south to north located to the east of the site, the brook runs into the River Clwyd. The site is within 2 km of 37 identified areas of Ancient Woodland and 1 Local Wildlife Site: Coed Orllwyn y Nant y Fforest (Lady Bagot's Woods). There are no National Nature Reserves, Local Nature Reserves nor any Sites of Special Scientific Interest (SSSIs) within 2 km of the site. The site is within 10 km of Llwyn Special Area of Conservation (SAC) and Alyn Valley Woods SAC. There are no Ramsar sites or Special Protection Areas within 10 km of the site.

The site is not located within an Air Quality Management Area (AQMA) nor are there any AQMAs located within 5 km of the site. The site is not located within an area listed in 'The Clean Air Plan for Wales' 2020.

4.1.3 What the Facility does

Newbridge Energy Limited produce wood fuel pellets for use in domestic wood burners. The regulated facility consists of the two 5.2 MW thermal input CHP biomass boilers, one fuelled on a mix of clean, uncontaminated waste woodchip and virgin woodchip, the other fuelled solely on virgin woodchip. The total thermal input of the site is 10.4 MW with a combined electrical output of 2 MWe.

4.1.4 Key Issues in the Determination

Our decision includes but is not limited to the following:

- Best available techniques
- Management of the facility
- Point source emissions to air

These will each be discussed separately in this decision document.

4.2 Best available techniques – relevant guidance and standards

The new unit although not a SWIP is subject to BAT (for air emissions only) because it is part of a part B installation. We consider the relevant guidance notes for the new plant are:

- Technical Guidance Note (TGN) M5: Monitoring of stack emissions from medium combustion plants and specified generators
- Environmental Permitting Technical Note 5/1(18) Reference document for the incineration / combustion of waste wood

Although the unit will not combust waste wood, we have determined that BAT, as laid out in 5/1 (18) guidance, is the most relevant to the combustion operation as there is no comparable guidance for MCP/SG that are not SWIP but combust solid biomass fuels. While some of the controls relevant to wastes are not applicable, the controls concerning combustion of wood as a solid fuel is essentially comparable BAT, whether or not waste.

4.3 Operation of the Facility – general issues

4.3.1 Administrative issues

The Applicant is the sole Operator of the Regulated Facility. We are satisfied that the Applicant is the person who will have control over the operation of the Regulated Facility; and that the Applicant will be able to operate the Regulated Facility so as to comply with the conditions included in the Permit. See below further detail on our assessment of operator competence.

Relevant Convictions

NRW's COLINS Database has been checked to ensure that all relevant convictions have been declared. There are no relevant convictions.

4.3.2 Management

The Applicant has stated in the Application that they have an Environmental Management System (EMS) that meets the requirements for an EMS in our "*How to comply with your environmental permit"* guidance. The Applicant submitted a copy of the EMS with their application. We have reviewed the EMS in line with the following guidance:

- Environmental Permitting Technical Note 5/1(18) Reference document for the incineration / combustion of waste wood
- How to comply with your environmental permit, version 8 (October 2014)
- Medium combustion plant and specified generator permits: how to comply (published July 2019) Medium combustion plant and specified generator permits: how to comply - GOV.UK (www.gov.uk)

Although not externally accredited, the EMS has been developed to meet the requirements of ISO14001:2015. The EMS includes the following components in line with BAT:

- Roles and responsibilities
- Accident management plan
- Incident and non-conformance reporting procedures
- Complaints procedure
- Maintenance schedule and procedures including cleaning
- Air quality monitoring assessments
- Qualitative and quantitative environmental risk assessments
- Technical descriptions of the plant, process flow diagrams, process controls
- Waste acceptance procedures and pre-acceptance procedures
- Waste storage and handling standards
- Training needs analysis and training records

- Fuel blending standard operating procedures (SOPs)
- Dark smoke checks procedure
- Accident, incident and spill response SOP
- Start-up, shutdown and incident plant procedures
- Management of process derived wastes SOP (bottom ash management and disposal)
- Record keeping, written and via the site SCADA system

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

Operator Competence

We acknowledge the previous compliance record of the Operator as relevant to the determination of the variation application. The full compliance history is not repeated here, but includes the following enforcement action be taken by NRW as a result of identified non-conformance concerns:

- Warning letter dated 09 April 2021 – relating to the operation of a second unpermitted CHP between November 2020 and January 2021
- Regulation 36 Notice – enforcement notice requiring the operator to take specified steps due to contravention of certain permit conditions.

Both the letter and the notice are available on the public register to view.

We have reviewed the Operator's compliance history and considered the assessment criteria as outlined in the following guidance: Legal operator and competence requirements: environmental permits - GOV.UK (www.gov.uk) and Regulatory Guidance Note (RGN) 5 'Operator Competence': Operator Competence (cyfoethnaturiol.cymru). Due to the following reasons we consider the Operator competent and able to comply with the permit conditions:

- Low environmental impact of non-compliance due to nature of regulated facility
- We do not consider the contraventions of permit conditions to be deliberate acts
- The Operator's response to warnings, guidance and enforcement has been satisfactory
- The Operator has been cooperative and responsive to NRW staff

- The Operator or any relevant person has not been convicted of any relevant offence
- We do not consider there has been repeated or continued significant non-compliances without regard to warnings or advice
- We consider that measures taken to remedy previous non-compliance have been taken within a reasonable time frame

We are satisfied the Operator is competent and able to comply with the permit conditions and that identified compliance issues have or are being addressed satisfactorily.

4.3.3 Operating techniques

We have reviewed the operating techniques used by the Operator and compared these with the relevant guidance notes, which we consider indicative Best Available Techniques (BAT) for the facility as discussed above.

Monitoring of point source emissions to air will be carried out in line with the monitoring requirements contained within TGN M5 and will have MCERTS accreditation. See Section 6.1 of this document for further detail regarding monitoring.

As a SWIP, Medium Combustion Plant and Specified Generator, the Operator must adhere to the following operating techniques for each unit:

- Each MCP/generator must be operated in accordance with the manufacturer's instruction and records must be made and retained to demonstrate this.
- The operator must keep periods of start-up and shut down of each MCP as short as possible.
- There must be no persistent emission of 'dark smoke' as defined in Section 3(1) of the Clean Air Act 1993.
- Where secondary abatement is required to ensure compliance with the NOx Emission Limit Value (ELV) it must be met within 10 minutes from when the generator commences operation or within 20 minutes when the generator was a Tranche A and is now a Tranche B generator.
- The stack must be vertical and unimpeded by cowls or caps.
- Unless otherwise agreed in writing, the SWIP must comply with the requirements of Environmental Permitting Technical Note 5/1 (18), which will serve as statutory guidance under Regulation 65 of The Environmental Permitting Regulations 2016 once finalised.

We have specified the operating techniques and the operator must use the operating techniques specified in Table S1.2 of the permit. We have incorporated the application and other operating techniques received by NRW during the lifetime of the permit into the operating techniques table (Table S1.2) in the permit.

We have reviewed the techniques used by the Operator and compared these with the relevant guidance note(s). Apart from the proposed techniques for the storage of fuel all other proposed techniques are in line with benchmark techniques contained within the relevant guidance notes. The proposed techniques for the storage of fuel and detail as to how we have addressed this deficiency is discussed below.

Storage of fuel - covering

There are particular storage techniques that are stated as BAT within the guidance in order to achieve good combustion within the permitted appliance. It is a requirement of the permit to ensure that fuel is of appropriate specification/composition when it enters the combustion unit to ensure good combustion. Poor combustion can lead to higher particulate emissions, dark smoke emissions and odours, therefore, should be avoided to minimise the Facility's environmental impact.

We consider it is BAT to store fuel under cover prior to incineration as per the following guidance which we consider indicative BAT:

1. Environmental Permitting Technical Note 5/1 (18) Reference document for the incineration / combustion of waste wood

'4.2.1 Variation in fuel size and moisture content limits the ability of combustion control systems to produce good combustion. Fuel with a narrow size and moisture distribution burns much better than mixed-size fuels or fuel of variable moisture level. Uncovered storage of fuels should be avoided to keep fuel dry'

2. Process Guidance Note 1/12 (13) Statutory guidance for combustion of waste wood. Revised July 2013:

'Table 5.1 – Summary of control techniques' states that fuel stores should be enclosed or covered to control particulate matter emissions.

'5.1.8 Variation in fuel size and moisture content limits the ability of combustion control systems to produce good combustion. Uncovered storage of fuels should be avoided to keep fuel dry.'

Furthermore, in addition to the moisture variability, we consider that BAT is to reduce moisture content wherever possible, as this promotes good combustion and increases energy efficiency, therefore any unjustified addition of moisture to a dryer fuel would be unacceptable.

The Operator proposed storage of fuel outside and uncovered in addition to the use of a moisture monitoring procedure. The procedure would reject any fuel that has a moisture content of above 55 %, which is the upper fuel moisture content limit stated within the manufacturer's specification for the boiler. The full moisture monitoring procedure has not been provided by the Operator; therefore an improvement condition has been set for the Operator to provide this to NRW for approval. See Annex 2 of this document for the improvement condition.

We do not consider the use of the moisture monitoring procedure achieves an equivalent level of environmental protection and combustion performance as storing the fuel undercover. This is because it would still allow for a wide variation in moisture content which will limit the ability to achieve good combustion, and allows fuel to become wetter through inappropriate storage. Ultimately, it is desirable to have fuel as dry as practically possible, and while moisture content of wood and biofuels can be variable, we do not consider any uncontrolled addition of moisture as BAT. While the appliance may be capable of combusting wood with a moisture content of 55 %, this figure must not be seen as a target, and it is extremely desirable to control the moisture level to a lower level than this wherever possible.

To address this deficiency we have included a pre-operational measure in the varied permit for the Operator to provide appropriate storage of the fuel. The Operator will not be able to operate the new second boiler until all the fuel to be used in both boilers meets BAT in terms of providing appropriate storage. See Annex 3 of this document

for the pre-operational measure, which applies to both the existing and newly permitted combustion units, and any wood, irrespective of whether or not it is waste.

We have also included a separate Improvement Condition in the permit for the Operator to provide appropriate storage of the fuel used only in the existing unit. This is included in the permit in case the Operator no longer desires to operate the second CHP unit and therefore is not required to discharge the pre-operational measure, which would result in the existing fuel remaining uncovered. This has been completed as part of our review of the storage of existing fuel as part of the Regulator initiated variation. See Annex 2 of this document for the improvement condition.

Eliminating risk of fuel cross-contamination

The Operator also proposed storing waste wood and virgin wood in immediately adjacent storage bays. Therefore, we queried how the Operator would ensure no contamination between fuel types would occur and what actions would be taken in the event of contamination, particularly as from a regulatory point of view it is important that waste fuel is only delivered to the SWIP. The Operator stated the following procedures are in place:

- When fuel is delivered to site, paperwork checks confirm the status of waste or non-waste
- Tipping of all fuel loads is supervised by a trained site operative/banksman who directs the driver to the correct bay (waste or non-waste bay)
- Waste and non-waste fuels are stored in separate segregated bays which are separated by concrete walls
- There are standards in place for storage within the EMS which includes a maximum height limit and residency time
- Operator stated wastes shall be stored short of the full length and height of the bay to avoid any spillage into the adjacent bays
- Waste and non-waste fuels have a distinctly different appearance so it is immediately apparent of any contamination between bays
- If waste fuel becomes mixed with non-waste fuel then whole mix is deemed as waste and used as fuel in the existing boiler which is permitted for burning of waste and non-waste fuel

We consider the above proposed techniques appropriate and in line with BAT, no further controls are considered necessary.

5 Minimising the Facility's environmental impact

For this kind of regulated activity, the principal emissions are point source emissions to air. There are no point source emissions to water, sewer or land from the regulated activity. BAT applies for air emissions only. Odour, noise, vibration and fugitive emissions are not expected to be significant from the regulated activity, the scope of which is explained above.

Odour

Odour is not expected to be significant from the operation of the new combustion unit as we have ensured good combustion is achieved by applying BAT as explained above.

Noise & vibration

Noise and vibration is not controlled by this permit, there are no conditions for noise in the permit due to the type of regulated facility. BAT applies to the regulated facility but for air emissions only. Therefore, noise is controlled via statutory nuisance controls within the Environmental Protection Act (1990) which is under the regulatory remit of the Local Authority and not this permit.

Fugitive emissions

The principal fugitive emission relating to the operation of the plant is dust, we do not consider litter, pests or mud to be significant from the regulated facility. Point source particulate matter emissions from the combustion plant itself is discussed below and is controlled via suitable / BAT abatement and emission limit values. Fugitive emissions from dust could arise from the immediate storage of bottom ash within the facility.

The Operator has stated there in an automatic de-ashing disposal system in place which deposits bottom ash within a covered container within a building. The bottom ash is then transferred from the indoor sealed container to an outdoor skip pending disposal via suitable waste disposal route. The Operator has a procedure in place for

the transfer of bottom ash between containers which ensures the outdoor skip remains covered when not in use amongst other requirements that would control fugitive emissions of bottom ash.

We have reviewed these techniques used by the Operator and compared these with the relevant guidance note(s) and we consider the proposed techniques are in line with benchmark techniques contained within the relevant guidance notes.

5.1 Assessment of Impact on Air Quality

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

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

The pollutants that have been assessed by the Applicant are:

- Oxides of nitrogen (NO and NO_2 expressed as NO_2 – collectively expressed as NO_X)
- Particulate matter (dust)
- Carbon monoxide (CO)
- Total volatile organic carbon (TVOC)

The air impact assessments, and the dispersion modelling has been based on the plant operating continuously at the relevant long-term or short-term emission limit values, i.e. the maximum permitted emission rate. The Applicant has included both new and existing plants in the model to provide a cumulative impact assessment of emissions from both units. The Applicant also included the four driers within the model even though these are not part of the regulated facility, this provides a cumulative impact assessment of total emissions from the site. The Applicant has completed the model at requested ELVs, in line with the ELVs contained within the MCP Directive, the SG Regulations and Environmental Permitting Technical Note 5/1 (18). The Applicant has modelled 8760 operational hours per year (24/7/365) although the plants are each expected to be operated for 8000 hours per year on average allowing for

maintenance down-time. The Applicant has modelled over 5 years of meteorological data and has presented the impact results for the worst case scenario. This approach provides a conservative assessment as the plants are expected to emit pollutants below the requested ELVs and to operate slightly under the modelled number of hours annually.

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

Detailed comments from audit of modelling

- Review of the dispersion modelling methodology carried out by the Applicant indicates that it meets the current requirements as set out in the relevant guidance.
- Submitted modelling was carried out using CERC's ADMS version 5.2 and included effects of surrounding buildings.
- Effects of terrain were excluded although this is deemed acceptable in this instance.
- The modelling was carried out using Numerical Weather Prediction meteorological data obtained from the Met Office for the years 2013 – 2017 and overall meets the requirements of current guidance
- CERC's ADMS version 5.2 model considers effects of temperature inversions on predicted impacts at receptors and will therefore account for these meteorological phenomena
- Assumptions made that PM_{10} and $PM_{2.5}$ consists of 100 % of total particulate emissions is considered suitable for a worst case assessment
- Assumptions made that 100 % TVOC is both benzene and 1,3-butadiene is considered suitable for a worst case assessment, see below for further detail
- NRW check modelling using the provided emission parameters generally agrees with the submitted predictions for the modelled receptors.

Human health impact assessment

The applicant has calculated maximum process contributions (PC) and predicted environmental concentrations (PEC) within the model domain and at all identified sensitive receptor locations. We have reviewed the locations of chosen sensitive receptor locations and agree with those chosen for the assessment. Short-term and long-term PC and PEC have been compared to all relevant environmental standards (ES) in line with the following guidance: Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk). We consider emissions insignificant if at receptors:

- the short-term PC is less than 10 % of the short-term ES
- the long-term PC is less than 1 % of the long-term ES

If these thresholds are not met, the Applicant must calculate the PEC, which is the PC plus the background concentration. The Applicant has considered the emissions not significant

- if the PEC is less than 100 % of the relevant ES

The Applicant must take further action if the PC could cause a PEC to exceed an ES or the PEC is already exceeding an environmental standard.

The site is not located within an Air Quality Management Area (AQMA) nor is there any AQMAs located within 5 km of the site. The site is not located within an area identified in the Clean Air Plan for Wales (2020). The modelling results for NOx, dust, CO and TVOC will be discussed separately below.

Oxides of nitrogen (NOx)

A long-term ES of 40 µg/m^3 (annual) was identified for NOx. The maximum predicted long-term PC within the modelled domain was 5.74 µg/m^3 which represents 14.3 % of the long-term ES. At modelled sensitive receptor locations the maximum predicted long-term PC was 2.91 µg/m^3 which represents 7.3 % of the long-term ES. At modelled sensitive receptor locations the maximum long-term PEC was 7.74 µg/m^3 which represents 19 % and below 70 % of the long-term ES. Therefore in accordance with current NRW guidance the long-term impacts from NOx can be considered not significant at any of the modelled sensitive receptor locations.

A short-term ES of 200 µg/m^3 (hourly) was identified for NOx. The maximum predicted short-term PC within the modelled domain was 43.62 µg/m^3 which represents 21.81 % of the short-term ES. At modelled sensitive receptor locations the maximum predicted short-term PC was 19.0 µg/m^3 which represents 9.5 % and below 10 % of the short-term ES. Therefore in accordance with current NRW guidance the short-term impacts from NOx can be considered insignificant at any of the modelled sensitive receptor locations.

Particulate matter (PM) – PM_{10} and $PM_{2.5}$

Total Particulate Matter (dust) will have a proportion made of each PM_{10} and $PM_{2.5}$. The Applicant has assessed each of PM_{10} and $PM_{2.5}$ separately and assumed that 100 % of total particulate matter emitted from the facility is PM_{10} and $PM_{2.5}$ for the purposes of assessment. This is a conservative approach as in reality PM_{10} and $PM_{2.5}$ are only emitted as a proportion of the total particulate matter.

A long-term ES of 40 µg/m^3 (annual) was identified for PM_{10} and a long-term ES of 20 µg/m^3 (annual) was identified for $PM_{2.5}$. A short-term ES of 50 µg/m^3 (daily mean) was identified for PM_{10}. There is no short-term ES for $PM_{2.5}$.

<u>PM_{10}</u>

The maximum predicted long-term PC within the modelled domain was 26.38 µg/m^3 which represents 66.0 % of the long-term ES, this location is within close proximity to the plant. At modelled sensitive receptor locations the maximum predicted long-term PC was 2.99 µg/m^3 which represents 7.5 % of the long-term ES. At modelled sensitive receptor locations the maximum long-term PEC was 12.48 µg/m^3 which is 31 % and below 70 % of the long-term ES. Therefore in accordance with current NRW guidance the long-term impacts from PM_{10} can be considered not significant and are unlikely to lead to a breach of the ES at any of the modelled sensitive receptor locations.

The maximum predicted short-term PC within the modelled domain was 47.95 µg/m^3 which represents 95.9 % of the short-term ES, this location is within close proximity to the plant. At modelled sensitive receptor locations the maximum predicted short-term PC was 10.8 µg/m^3 which represents 21.5 % of the short-term ES. At modelled sensitive receptor locations the maximum predicted short-term PEC was 29.75 µg/m^3

which represents 59.5 % of the short-term ES. Therefore in accordance with current NRW guidance the short-term impacts from PM_{10} can be considered not significant and are unlikely to lead to a breach of the ES at any of the modelled sensitive receptor locations.

$PM_{2.5}$

The maximum predicted long-term PC within the modelled domain was 26.38 µg/m^3 which represents 131.9 % of the long-term ES, this location is within close proximity to the plant. At modelled sensitive receptor locations the maximum predicted long-term PC was 2.99 µg/m^3 which represents 15.0 % of the long-term ES. At modelled sensitive receptor locations the maximum long-term PEC was 9.34 µg/m^3 which represents 47 % and below 70 % of the long-term ES. Therefore in accordance with current NRW guidance the long-term impacts from $PM_{2.5}$ can be considered not significant and are unlikely to lead to a breach of the ES at any of the modelled sensitive receptor locations.

Carbon monoxide (CO)

Carbon Monoxide has two short-term ES, 1 hour and 8 hour rolling average. There is no long-term ES for CO. A short-term ES of 30,000 µg/m^3 (1 hour) was identified for CO. The maximum predicted short-term PC (1 hour) within the modelled domain was 176.45 µg/m^3 which represents 0.588 % and below 10 % of the short term ES. A short term ES of 10,000 µg/m^3 (8 hour running average) was used for CO. The maximum predicted short-term PC (8 hour running average) within the modelled domain was 80 µg/m^3 which represents 0.8 % and below 10 % of the short term ES. Therefore in accordance with current NRW guidance the short-term impacts from CO can be considered insignificant at all locations within the modelled domain including at all sensitive receptor locations.

Total volatile organic carbon (TVOC)

In accordance with the guidance: *Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk)*, the Applicant has assumed that TVOC is emitted as 100 % benzene and 100 % 1,3-butadiene. This assumption is used when the exact composition of emitted VOCs is not known. Assessment is made using benzene or 1,3-butadiene as they are the have the lowest ES of any VOC, and the

harm associated with other VOCs emitted will be less. This is therefore a conservative approach as in reality benzene and 1,3-butadiene are expected to be a very small proportion of the TVOC emitted.

Benzene

A long-term ES of 5 µg/m^3 (annual) was identified for benzene. The maximum predicted long-term PC within the modelled domain was 0.66 µg/m^3 which represents 13.29 % of the long-term ES. At modelled sensitive receptor locations the maximum predicted long-term PC was 0.32 µg/m^3 which represents 6.3 % of the long-term ES. At modelled sensitive receptor locations the maximum long-term PEC was 0.42 µg/m^3 which represents 8.0 % and below 70 % of the long-term ES. Therefore in accordance with current NRW guidance the long-term impacts from TVOC as benzene can be considered not significant and is unlikely to lead to a breach of the ES at any of the modelled sensitive receptor locations.

A short-term ES of 30 µg/m^3 (24-hour average) was identified for benzene. The maximum predicted short-term PC within the modelled domain was 4.84 µg/m^3 which represents 16.0 % of the short-term ES. At modelled sensitive receptor locations the maximum predicted short-term PC was 2.85 µg/m^3 which is 9.5 % and below 20 % of the short-term ES minus twice the long-term background. Therefore in accordance with current NRW guidance the short-term impacts from TVOC as benzene can be considered not significant and is unlikely to lead to a breach of the ES at any of the modelled sensitive receptor locations.

1,3-butadiene

A long-term ES of 2.25 µg/m^3 (annual) was identified for 1,3-butadiene. The maximum predicted long-term PC within the modelled domain was 0.66 µg/m^3 which represents 29.5 % of the long-term ES. At modelled sensitive receptor locations the maximum predicted long-term PC was 0.32 µg/m^3 which represents 14.1 % of the long-term ES. At modelled sensitive receptor locations the maximum long-term PEC was 0.35 µg/m^3 which represents 15.0 % and below 70 % of the long-term ES. Therefore in accordance with current NRW guidance the long-term impacts from TVOC as 1,3-butadiene can be considered not significant and is unlikely to lead to a breach of the ES at any of the modelled sensitive receptor locations.

Possible impact from Katabatic Flow

In addition to the detailed audit of the Applicant's assessment as detailed above, NRW air quality modelling specialists have also completed an assessment which investigated the risk of impacts at human health receptors being exacerbated by possible effects on plume dispersion from cold air drainage (katabatic) flows using the KLAM_21 model developed by the German Weather Service. This additional assessment although not routinely conducted was completed due to concerns raised regarding possible poor dispersion of the plume under certain atmospheric conditions.

When regional wind speeds are low and cloud cover is minimal or absent, nocturnal radiative cooling of air at the top of surrounding hills may occur after sunset and, due to the nature of the local topography, this dense cold air can flow downwards under the force of gravity, forming a cold air layer at the base of the valley. When emission sources are contained within the cold air layer, drainage flows can play a significant role in the transport of pollutants and may even be the primary mechanism controlling pollutant dispersion. Emissions may become wholly entrained in these layers resulting in reduced dispersion and higher pollutant concentrations in the plume.

While the surrounding hills and associated draining valleys may facilitate cold air drainage into the Clwyd Valley, we could not confirm from this desk study that the phenomenon occurs to any degree in the vicinity of the facility, particularly in view of the relatively wide flat basin at the base of the valley and the radiative heating effect of domestic properties in Ruthin immediately to the south-east of the facility. Analysis of four years of Numerical Weather Prediction data indicate that meteorological conditions favourable for cold air drainage may occur with relatively low frequency.

The cold air drainage events were modelled to determine the potential effects on dispersion of pollutants from the facility. Over the thirteen hours modelling, the cold air flow carries the entrained plume away from Ruthin following the natural topography of the Vale of Clwyd towards the north-west and away from the closest sensitive human health receptors identified in the Applicant's modelling.

5.2 Impact on Habitats sites, Site of Special Scientific Interest (SSSI), non-statutory conservation sites

The Facility is within the relevant screening distance criteria for protected conservation sites. A full assessment of the application and its potential to affect any of the sites has been carried out as part of the permit determination process. Natura 2000/Ramsar sites, SSSIs and non-statutory conservation sites will be discussed in detail separately below.

The Applicant has completed detailed air dispersion modelling which has included calculation of process contributions at the habitat sites and maximum process contributions over the whole model study area. The air quality pollutant emitted of concern for impacts on habitats is NOx which can lead to long-term and short-term nitrogen oxide airborne impacts, long-term nutrient enrichment and long-term acidification impacts. There are no other point source emissions from the regulated facility, therefore the assessment has focused solely on impacts from emissions to air only.

5.3 National Site Network[1]/Ramsar sites

The following National Site Network[1]/Ramsar sites are located within 10 km of the regulated facility:

- Llwyn Special Area of Conservation (SAC) UK0030185
- Alyn Valley Woods / Coedwigoedd Dyffryn Alun SAC UK0030078

An OGN 200 Form 1 (Habitats Regulations Assessment) was completed to assess the potential to affect the National Site Network[1]/Ramsar sites, including possible air quality impacts. This is available to view on the public register with a summary of the conclusions given below.

[1] As per the amendment to Regulation 3 of the Conservation of Habitats and Species Regulations 2017: The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (legislation.gov.uk). National Site Network means the network of sites in the United Kingdom's territory consisting of such sites as – (a) immediately before exit day formed part of Natura 2000; or (b) at any time on or after exit day are European sites, European marine sites and European offshore marine sites for the purposes of any of the retained transposing regulations.

In light of the conclusions of an appropriate assessment, and taking account of the advice received from protected sites advisors, it has been established that the project will not adversely affect the integrity of any National Site Network/Ramsar site either alone or in-combination with other plans and projects.

5.4 SSSI Assessment

There are no SSSIs located within 2 km of the site therefore no further assessment is required.

5.5 Non-statutory conservation sites

There are no National Nature Reserves or Local Nature Reserves within 2 km of the regulated facility. The following Local Wildlife Site is within 2 km of the regulated facility:

- Coed Orllwyn y Nant y Fforest / Lady Bagot's Woods

There are 37 designated/identified areas of Ancient Woodland within 2 km of the regulated facility. The Applicant has assessed impacts from emissions at 4 modelled locations which represent the closest non-statutory conservation sites to the regulated facility. This is appropriate because at locations further away impacts are expected to be less.

Airborne Oxides of Nitrogen (NOx) emissions – long term

The maximum predicted long-term process contribution is 3.0 % and <100 % of the long-term critical level (30 µg/m^3), therefore in line with current NRW guidance impacts of long-term airborne NOx emissions are considered insignificant and no further assessment is required.

Airborne Oxides of Nitrogen (NOx) emissions – short term

The maximum predicted short-term process contribution is 14.13 % and <100 % of the short-term critical level (75 µg/m^3), therefore in line with current NRW guidance impacts of short-term airborne NOx emissions are considered insignificant and no further assessment is required.

Nutrient Enrichment

The maximum predicted process contribution is 0.181 kgN/ha/yr which is 18.13 % and <100 % of the minimum possible critical load (3 kgN/ha/yr), therefore in line with current NRW guidance impacts of nutrient enrichment are considered insignificant and no further assessment is required.

Acidification

Although the Applicant did not assess the impact of acidification on Lady Bagot's Woods, NRW modelling specialists did complete this assessment as part of their audit. The maximum predicted process contribution was found to be <100 % of the minimum critical load function, therefore in line with current NRW guidance impacts of acidification are considered insignificant and no further assessment is required. Given the PC for long-term airborne NOx is well below 100 % of the critical level and due to the nature of deposition dynamics we would expect the PC for acidification to be below 100 % for all receptors.

6 Setting ELVs and other permit conditions

We have decided that emission limits should be set for the parameters listed in the permit. Emissions Limit Values (ELVs) are in line with those set out in the MCP Directive, SG Regulations and draft Environmental Permitting Technical Note 5/1(18). We have set ELVs for the new plant in line with Environmental Permitting Technical Note 5/1(18) even though the new plant is not permitted as a SWIP. The new plant is located on a Part B installation and therefore is subject to BAT but only for emissions to air. We consider the ELVs contained within the technical guidance note indicative BAT as it is the most relevant guidance note available.

6.1 Monitoring

We have decided that periodic monitoring should be carried out for the parameters listed in Schedule 3 of the permit using the methods and to the frequencies specified in Table S3.1. These monitoring requirements have been imposed in order to demonstrate compliance with the emissions limits in the permit, as per the ELV and monitoring frequency requirements specified within the MCP Directive, Specified Generator Regulations and Environmental Permitting Technical Note 5/1 (18).

We have reviewed Part 5.1.5 of Environmental Permitting Technical Note 5/1 (18) and have decided that on the basis of risk, periodic monitoring is appropriate. Continuous monitoring which would be implemented in the case of higher environmental risk is not required for the following reasons:

- There is not predicted to be a breach of any air quality ES either at human health or habitat receptors therefore the predicted level of risk to local air quality is low
- The new unit is fuelled solely on virgin woodchip therefore there is no variability in waste types and likelihood of variability of operation is considered low, provided that moisture content and variability of fuels is controlled (see above)
- The new unit has a continuous feed system in place therefore there is limited variability in feed rate. Fuel feed is monitored via the Supervisory Control and Data Acquisition (SCADA) system.
- There is secondary abatement in place via cyclone and bag filter abatement system which is monitored via the SCADA system that monitors pressure differentials and temperature. The plant is not permitted to operate without these being operational.

For emissions to air, the methods for periodic monitoring are in accordance with the Environment Agency's Technical Guidance Note M5 for monitoring of stack gas emissions from medium combustion plants and specified generators. We can review the permit and monitoring requirements if we consider a review required.

Based on the information in the Application and the requirements set in the conditions of the permit we are satisfied that the monitoring techniques, personnel and equipment employed by the Operator will have either MCERTS certification or MCERTS accreditation as appropriate.

6.2 Reporting

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

7 MCPD/SG Charges and Subsistence Fees

The type of application regarding MCPD and SG will have an associated charge. The MCPD/SG application type and number of plant will also form the basis for ongoing subsistence fees. The application type and plant type is a complex bespoke. More

information on this can be found in our charging scheme on our website. There has been a change in the subsistence fee following this variation due to the addition of one further MCP/SG.

ANNEX 1: Consultation Reponses

A) Advertising and Consultation on the Application

The Application has been advertised and consulted upon in accordance with Natural Resources Wales Public Participation Statement. The way in which this has been carried out along with the results of our consultation and how we have taken consultation responses into account in reaching our draft decision is summarised in this Annex. Copies of all consultation responses have been placed on Natural Resources Wales public register.

1) 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**
ISO14001:2015 Accredited EMS: As a result of the enforcement activity we recommend that the site be robustly monitored for compliance by the regulator due to the previous poor adherence to operating controls.	Compliance inspection of the site is undertaken by the local regulatory compliance team.
We recommend the regulator is satisfied that the assumptions used in the atmospheric dispersion model reflect the operating conditions at the site.	The detailed air dispersion model has undergone an audit by NRW air quality modelling specialists and we are satisfied it is representative. See Section 5.1 of this document for assessment of impact on air quality. We have set emission limit values and monitoring requirements for emissions from the new CHP unit.
If permitting guidance allows, we would recommend that continuous emissions monitoring is undertaken and done so without stipulation of an end-point for monitoring.	See Section 6.1 of this document for reasons why we determine periodic monitoring is appropriate for the new plant. The decision has been made in line with relevant permitting guidance.
The regulator should be satisfied that the emissions monitoring exercises are representative, and that the site can operate continuously with the lowest possible emissions.	Monitoring will be in line with MCERTS standard which amongst other requirements will ensure it is representative. We are satisfied the Operator will be able to operate the new plant within their permitted Emission Limit Values. We are satisfied that emissions at the permitted limits would ensure a high level of protection for human health and the environment in any event.
The regulator should ensure that the applicant has controls in place to ensure only permitted fuels are used in each combustion unit.	See Section 4.2.3 of this document for assessment of storage techniques for the fuel. The new unit will be permitted to use only virgin woodchip as fuel. The variation

	does not affect the fuels used for the existing unit.
The regulator should be satisfied that the applicant can appropriately control combustion when rainfall could influence fuel moisture.	See Section 4.2.3 of this document for assessment of storage techniques for the fuel. We have included a pre-operational measure in the permit for the Operator to cover the fuel used in the new and existing unit.
The regulator should ensure that process liquids (e.g. lubricants, vehicle fuels, corrosion inhibitors etc) are appropriately bunded to prevent contamination of water or land.	Storage of any process liquids is not regulated by this permit. The regulated facility consists of the combustion unit itself and immediate storage of bottom ash. Notwithstanding this the Operator is required to comply with all other relevant controls and legislation.
We recommend that a nuisance management plan is in place to address any complaints of odour, noise or other nuisance.	**Odour** Good combustion should achieve air emissions free from offensive odour. We are satisfied the new unit will be operated in line with BAT and therefore good combustion should be achieved. Therefore, we do not consider an odour management plan necessary. **Noise** Noise is not controlled by this permit. See Section 5 of this document for further detail as to how noise is controlled. **'Other' nuisances** We consider 'other nuisances' to include litter, dust and pests. We do not consider the litter and pest nuisance to be significant for this type of regulated facility. Neither a litter management plan nor a pests management plan are considered necessary. Dust emissions from the regulated facility are controlled by the application of BAT. We are satisfied the management of bottom ash is in line with BAT. Therefore we do not consider a dust management plan necessary.
The regulator should ensure the applicant has a fire prevention plan.	In line with NRW Fire Prevention & Mitigation Plan Guidance – Waste Management, a fire prevention and mitigation plan is only required when storing combustible waste materials via a permitted waste operation. NRW consider that virgin woodchip is not a waste material. The regulation of the storage and treatment of waste at the site for the existing combustion unit is not controlled in the permit via a permitted waste operation. As there is no permitted waste operation there is no requirement for a Fire Prevention and Mitigation Plan in line with current NRW guidance.

Response Received from Denbighshire County Council (Environmental Health)	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
Provided that the Medium Combustion Plant meets requirements of BAT and performs to emission limits specified in the permit then DCC has no objection to variation application.	See Section 4.2.3 of this document for assessment of operating techniques and BAT. The Operator has confirmed the new unit can achieve the required emission limit values in the permit, previous monitoring exercises performed on the existing unit was provided as evidence for this statement. The existing unit is identical to the new unit; therefore we have no reason to consider that the Operator should not be able to comply with the required emission limit values.
In order to maintain a more consistent moisture content of the fuel and ensure complete combustion, we propose that the fuel stockpiles are enclosed.	See Section 4.2.3 of this document for assessment of storage techniques for the fuel. We have included a pre-operational measure in the permit for the Operator to cover the fuel used in the new and existing unit.
We propose that emissions from both biomass boilers be continuously monitored for the main pollutants released during the combustion process.	The monitoring of the existing unit is not in scope of the determination of the variation application. See Section 6.1 of this document for reasons why we determine periodic monitoring is appropriate for the new plant. The decision has been made in line with permitting guidance.

2) Consultation Responses from Members of the Public and Community Organisations

A number of the issues raised during the consultation process are outside Natural Resources Wales remit in reaching its permitting decisions. Specifically questions were raised which fall within the jurisdiction of the planning system, both on the development of planning policy and the grant of planning permission. Specific planning issues raised related to the location of the site, the location of the stack, traffic movements and emissions from off-site traffic movements.

Guidance on the interaction between planning and pollution control is given in PPS23 / Planning Policy Wales. It says that the planning and pollution control systems are separate but complementary. We are only able to take into account those issues, which fall within regulatory scope of the Environmental Permitting Regulations.

a) Representations from Local MP, Member of the Senedd (MS), Councillors and Parish / Town / Community Councils

Response Received from Darren Millar MS	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
Unacceptable and potentially harmful air quality	See Section 5.1 of this document for assessment of impact on air quality which concluded that impacts were not significant.
Retrospective application only been made following the identification of the operation of a second CHP boiler following complaints from local residents	Whether the application is retrospective or prospective is not pertinent to the permitting decision itself although a permit is required to be in place for a facility to be operated, and appropriate regulatory action has been taken ahead of permit determination. The second unit is no longer operating until our permitting decision has been made.
Lack of cumulative impact assessment of both CHP boilers and other boilers at Blazers Fuels and Clifford Jones Timber	The Applicant has assessed the cumulative impact of both CHP boilers, there are no other boilers in operation at Blazers Fuels. There are four wood driers which have also been included in the impact assessment although are not in scope of the regulated facility and this assessment goes beyond our normal expectations. The Applicant has completed their air emissions risk assessment in line with current guidance: Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk). For the Operator to include a boiler not within their operational control is beyond the expected requirements of the detailed air dispersion modelling required for this permit application.
No regard been given to emissions monitoring, complaints and photographic evidence from local residents.	Previous complaints have been investigated by the local compliance team and are not in scope of assessment of this determination. We have acknowledged the previous compliance history of the Operator, see Section 4.4.2 of this document for assessment of Operator competence.
Documents provided by the Operator rely on monitoring of existing operations, they may not be representative of all seasons, atmospheric conditions and weather conditions.	Detailed air dispersion modelling has been completed at the maximum emission rates. Detailed air dispersion modelling has been completed taking account of the worst meteorological conditions over a 5 year period. This recognised methodology is considered representative of worst-case meteorological conditions and is considered conservative in its approach as it uses a number of worst case assumptions to estimate maximum impact. See Section 5.1 of this document for assessment of impact on air quality.
Storage of virgin wood uncovered and in close proximity to waste wood is unacceptable.	See Section 4.2.3 for further information relating to storage of wood prior to its combustion in the regulated facility.

	We have included a pre-operational measure in the permit for the Operator to cover the fuel used in the new and existing unit.
Annual monitoring is too infrequent and does not account for variations in atmospheric and weather conditions.	There would be no change to the point source emissions due to changes in atmospheric and weather conditions, just changes to the dispersion of said emissions. Point source monitoring measures particular emissions prior to release not the dispersion of emissions. Detailed air dispersion modelling has been completed taking account of the worst meteorological conditions over a 5 year period. This recognised methodology is considered representative of worst-case meteorological conditions. See Section 5.1 of this document for assessment of impact on air quality. See Section 6.1 of this document for reasons why we determine periodic monitoring is appropriate for the new plant. The decision has been made in line with permitting guidance.
The Operator should fund local air quality monitoring stations.	This matter is not within scope of EPR.
Previous poor compliance record of Operator.	We are aware the Operator has a previous compliance record; we are working with the Operator to improve their compliance record and are taking the necessary action. See Section 4.4.2 of this document for assessment of Operator competence.
Clean Air Act for Wales	This is a reference to the Clean Air Wales Bill which is not yet in force so does not apply.

Response Received from Ruthin Town Council	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
Poor air quality	See Section 5.1 of this document for assessment of impact on air quality.

b) Representations from Community and Other Organisations

Response Received from Glasdir Residents Association	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
Poor compliance history and poor operator competence	See Section 4.2.2 of this document for assessment of operator competence.
Comments relating to air quality and smoke	See Section 5.1 of this document for assessment of impact on air quality. Good combustion should achieve air emissions free from dark smoke. We are satisfied the new unit will be operated in line with BAT and therefore good combustion should be achieved.

	See Section 4.2.3 of this document for assessment of operating techniques. The following operating technique is included in the permit: *'There must be no persistent emission of 'dark smoke' as defined in section 3(1) of the Clean Air Act 1993.'* We consider this condition suitably protective and daily assessment of smoke colour/visibility is also required as a permit condition.
Comments relating to odour pollution	Good combustion should achieve air emissions free from offensive odour. We are satisfied the new unit will be operated in line with BAT and therefore good combustion should be achieved. See Section 4.2.3 of this document for assessment of operating techniques.
Comments relating to noise pollution	Noise is not controlled by this permit. See Section 5 of this document for further detail as to how noise is controlled.
Comments relating to accident management	See Section 4.2.2 of this document for assessment of management at the regulated facility.
Location of plant is unsuitable	This matter is outside of the scope of the environmental permit. It may be within scope of the planning process.
Existing unit should be fuelled on virgin woodchip	The assessment of the fuel used in the existing unit is not in scope of the determination of the variation application.
Moisture level in biomass has been root cause previously	See Section 4.2.3 of this document for assessment of storage techniques for the fuel. We have included a pre-operational measure in the permit for the Operator to cover the fuel used in the new and existing unit.
Detrimental impact on housing value	This matter is not within scope of EPR.
Should focus on operation of existing unit	We have completed a permit review and a regulator initiated variation relating to the existing unit. However, the operation of the existing unit is not in scope of the determination of the Applicant's application. As the EPR regulator in Wales, we are required to determine any duly made permit application. This means that we must decide either to grant, or to refuse the variation based upon an objective assessment of the proposals against the detailed legal requirements of EPR. We cannot base our decision on any other factors; it would be unlawful to do so. Our public participation statement gives more information on what can, and cannot, be taken into account when making our permitting decision.

Response Received from Ruthin Friends of the Earth	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
Poor air quality	See responses above and Section 5.1 of this document for assessment of impact on air quality.
Comments relating to nuisances	See responses above and Section 5 of this document for assessment of environmental impact of the Facility.
Serious threat to the community	See Section 5 of this document for assessment of environmental impact of the Facility.

c) Representations from Individual Members of the Public

Response Received from members of the public	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
Odour pollution	Good combustion should achieve air emissions free from offensive odour. We are satisfied the new unit will be operated in line with BAT and therefore good combustion should be achieved. See responses above and Section 4.2.3 of this document for assessment of operating techniques.
Noise pollution	Noise is not controlled by this permit. See Section 5 of this document for further detail as to how noise is controlled.
Air quality and smoke pollution	See Section 5.1 of this document for assessment of impact on air quality. Good combustion should achieve air emissions free from dark smoke. We are satisfied the new unit will be operated in line with BAT and therefore good combustion should be achieved. See section 4.2.3 of this document for assessment of operating techniques. The following operating technique is included in the permit: *'There must be no persistent emission of 'dark smoke' as defined in section 3(1) of the Clean Air Act 1993.'* We consider this condition suitably protective.
Consideration of profit/money over environment	Operator profit is not relevant nor pertinent to the permitting decision. As the EPR regulator in Wales, we are required to determine any duly made permit application. This means that we must decide either to grant, or to refuse the variation based upon an objective assessment of the proposals against the detailed legal

	requirements of EPR. We cannot base our decision on any other factors; it would be unlawful to do so. Our public participation statement gives more information on what can, and cannot, be taken into account when making our permitting decision.
Comments relating to how we have considered COP26, climate emergency and net zero	None of these matters are directly within scope of the environmental permit. We are satisfied that our determination considers the wider legislative framework as laid out in Section 3 of this document. As the EPR regulator in Wales, we are required to determine any duly made permit application. This means that we must decide either to grant, or to refuse the variation based upon an objective assessment of the proposals against the detailed legal requirements of EPR. We cannot base our decision on any other factors; it would be unlawful to do so. Our public participation statement gives more information on what can, and cannot, be taken into account when making our permitting decision.
How have we considered the Well-Being of Future Generations (Wales) Act 2015?	See Section 3 of this document for information on all relevant legislation that has been considered in the determination.
Poor Operator competence and poor compliance history	See responses above and Section 4.2.2 of this document for assessment of operator competence.
Unsuitable plant location	This matter is outside of the scope of the environmental permit. It may be within scope of the planning process. As the EPR regulator in Wales, we are required to determine any duly made permit application. This means that we must decide either to grant, or to refuse the variation based upon an objective assessment of the proposals against the detailed legal requirements of EPR. We cannot base our decision on any other factors; it would be unlawful to do so. Our public participation statement gives more information on what can, and cannot, be taken into account when making our permitting decision.
Unsuitable air emissions monitoring	We consider the proposed monitoring of air emissions suitable and in line with Best Available Techniques. See Section 6.1 of this document for further information.
Unsuitable fuel input	The proposed fuel is virgin woodchip, we have determined the fuel input is suitable for the proposed combustion plant.
Dust pollution	The Operator has bag filter dust abatement system in place therefore we consider the risk of dust pollution to be low. The use of bag filter abatement system is considered BAT.

	See Section 5.1 of this document for assessment of impact on air quality. We consider the storage of bottom ash to be in line with BAT.
How have we considered the Clean Air Act?	We have considered the Clean Air Act 1993 as the following operating technique is included in the permit: *'There must be no persistent emission of 'dark smoke' as defined in section 3(1) of the Clean Air Act 1993.'* If this is a reference to the Clean Air Wales Bill, the bill is not yet in force so does not apply.

ANNEX 2: Improvement Conditions

The following improvement condition has been included in the permit as the Operator has not provided the full moisture monitoring procedure as requested.

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
IC1	The Operator shall submit a report to NRW for approval. The report shall detail the full procedure for measuring moisture content of the fuel for use in activity references AR1 and AR2 in Table S1.1. The procedure shall include but not be limited to: • Sampling technique(s) • Demonstration that the measurement(s) are representative of the fuel moisture content at the point of introduction to the combustion process • acceptable moisture content (with reference to relevant specifications, standards and/or guidance as relevant) • Actions for fuel rejected on basis of moisture content The procedure shall be submitted to NRW for approval. Once approved the procedure shall be implemented.	Within 1 month of variation V002 issue date
IC2	The operator shall provide fuel storage that meets the requirements of 4.2.1 of Environmental Permitting Technical Note 5/1(18), Final Draft, dated 15/08/18 for all fuels that are used in combined heat and power boiler (activity reference AR1 in Table S1.1 of this permit). All fuel shall be stored under appropriately designed cover which shall ensure that it is kept dry and that ingress of rainwater is prevented. Storage shall be suitably sized to provide sufficient capacity, having regard also for other relevant factors such as the separation of different fuel types and sizes as required operationally. The Operator shall submit to Natural Resources Wales for approval, prior to commencement of construction, a report detailing the specification and design of the covered fuel storage area(a). Prior to construction, the Operator should satisfy themselves they have all other required legal permissions which may be required for construction of the storage facility.	In line with pre-operational measure PO2 and in any case within 12 months of variation V002 issue date or as otherwise agreed in writing with Natural Resources Wales.

ANNEX 3: Pre-operational measures

The following pre-operational measure has been included in the permit for reasons explained in Section 4.2.3 of this document.

Table S1.4B Pre-operational measures for future development		
Reference	**Operation**	**Pre-operational measures**
PO2	Activity Reference AR2 in Table S1.1	Prior to operation of activity reference AR2 in Table S1.1 of this permit, the operator shall provide fuel storage that meets the requirements of 4.2.1 of Environmental Permitting Technical Note 5/1(18), Final Draft, dated 15/08/18 for all fuels that are used in all combined heat and power boilers (activity references AR1 and AR2 in Table S1.1 of this permit). All fuel shall be stored under appropriately designed cover which shall ensure that it is kept dry and that ingress of rainwater is prevented. Storage shall be suitably sized to provide sufficient capacity, having regard also for other relevant factors such as the separation of different fuel types and sizes as required operationally. The Operator shall submit to Natural Resources Wales for approval, prior to commencement of construction, a report detailing the specification and design of the covered fuel storage area. Prior to construction, the Operator should satisfy themselves they have all other required legal permissions which may be required for construction of the storage facility.