James Jones & Sons (Pallets and Packaging) Limited – Larch House Wrexham Biomass Boiler

New bespoke permit

The permit number is: PAN-015191
The Applicant / Operator is: James Jones & Sons (Pallets and Packaging) Limited
The Facility is located at: Larch House, Oak Road, Wrexham Industrial Estate, Wales, LL13 9RG

We have decided to grant the permit for James Jones Wrexham Biomass Boiler operated by James Jones & Sons (Pallets and Packaging) Limited.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

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

Structure of this document

- Table of contents
- Key issues
- Annex 1 the consultation and web publicising responses

Table of Contents

Contents

Key issues of the decision

1 Our decision

This Application is to operate a regulated facility which is subject principally to the Environmental Permitting Regulations 2016 (EPR) and Medium Combustion Plant Directive (MCPD). The unit will be fired on wood, including certain waste wood. Hence it is referred to as both a Medium Combustion Plant (MCP) and small waste incineration plant (SWIP), although it is not subject to EPR Schedule 13 for incineration as explained below. Furthermore as the plant does not generate electricity, is it not subject to the Specified Generator Regulations (Schedule 25B of EPR).

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.

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 23rd November 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 RGN6 for Determinations involving Sites of High Public Interest.

Furthermore we have also considered the Well-Being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016 during our assessment process.

We advertised the Application by a notice placed on our website, 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 30th November 2021 and ended 31st December 2021.

A copy of the Application and all other documents relevant to our determination (see below) are available for the public to view. Anyone wishing to see these documents could arrange for copies to be made.

We consulted Wrexham County Borough Council / Cyngor Bwrdeistref Sirol Wrecsam on the SWIP application as it concerned the permitting of a plant located on a site also subject to a Part A2 or Part B (local authority) permit application for separate manufacturing activity. Their expertise, democratic accountability and/or local knowledge make it appropriate for us to seek their views directly.

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.

2.3 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 the types of wastes proposed

for combustion, and the operating techniques proposed for the MCP unit. Upon receipt of this information we were able to consider the application Duly Made. Furthermore, the applicant provided an email with an additional technical point of information on the air quality modelling, during our determination on 14/12/21.

A copy of the information request notice and e-mails requesting and providing further information were placed on our public register.

3 The Legal Framework

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

- plant as described by Schedule 25A covering the Medium Combustion Plant Directive (MCPD)
- plant as described in EPR Schedule 1, Part 2, Chapter 5, Section 5.1 Part B (a)(v) – *Small waste incineration plant*
- 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.

4 The Facility

4.1 Description of the Facility and related issues

4.1.1 The permitted activities

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

- Chapter 5, Section 5.1 Part B (a) (v) The incineration in a small waste incineration plant 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
- One new Medium Combustion Plant aggregated to <50 MWth at a specified location as put into operation after 20 December 2018
- It is not however a SWIP subject to Schedule 13 of EPR (waste incineration plant) because it burns only fuels which are excluded from meeting the requirements of Schedule 13. It is not subject to the Specified Generator Regulations (EPR Schedule 25B) as it does not generate electricity.

The plant is classed as a new medium combustion plant 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.

4.1.2 The Site

The site is located at Larch House, Oak Road, Wrexham Industrial Estate, LL13 9RG. The immediate surrounding is predominately industrial estate (commercial / industrial / manufacturing / retail use) and beyond it is the village of Pentre Maelor, which is North and West of the facility. The closest receptor (adjacent industrial facility) is approximately 200 m from the facility emission point. The nearest domestic property is located approximately 300 m South-South West of the regulated facility, with other houses and a school situated to the East of the facility along the B5130 road. Other

land to the north, south and east of the site is largely agricultural. The town of Wrexham is approximately 3.5 Km to the North West.

A number of protected environmental receptors (ecological sites) are in the vicinity of the regulated facility, notably the River Dee to the south and east, which is designated as a Site of Special Scientific Interest (SSSI) (1.8 Km away at closest point) and a Special Area of Conservation (SAC) (2.3 Km away at the closest point). More distant are Midland Meres and Mosses Phase 2 Ramsar (5.5 Km) and Johnstown Newt sites SAC (8 Km). Locally designated wildlife sites exist within Wrexham industrial estate (Bryn Lane, Cefyn Park), and these are 450-750 m from the facility, and various areas of ancient woodland are identified, with the closest being 1.3 Km from the site. These potentially sensitive receptors are considered further in the discussion below.

4.1.3 What the Facility does

The main James Jones & Sons production facility produces wooden packaging materials including pallets from virgin timber, and also undertakes a small amount of pallet repair work, activity which is separately permitted by the local authority. The production process includes the use of kilns to dry / treat the products. This decision document applies to a 2.11 MW_{th} input MCP-SWIP (Uniconfort MOD. EOS 150; Serial Number 2925) which provided process heating to the kilns, and space heating for buildings. The local authority production facility permit and NRW MCP-SWIP permit are separate. This boiler is used to heat water/steam as a heat transfer medium used in the production process (rather than for direct heating), meaning that the plant falls under the MCPD. There is no generation of electricity from the MCP meaning that specified generator regulations do not apply.

The MCP is fitted with an 18 m high stack and is expected to operate continuously, i.e. approaching 8760h/year (excluding maintenance, stoppages etc). Firing will be modulated according to demand, between 100 % of Maximum Continuous Rating (MCR), and 50 % of MCR, which is the minimum turn-down for the unit. It is permitted in line with impact modelling to operate continuously 24/7/365 all year.

The permit does not include provision for the treatment or storage of waste wood prior to combustion as there has been no application for such additional activities and these

are not included in the 1.1 Part B combustion activity. The applicant has indicated that such activities may take place under exemptions or regulatory decisions. We have not audited conformance of any proposed waste storage or treatment as part of this determination, and have informally advised the applicant to ensure that proposed arrangements meet all relevant legislative requirements.

4.1.4 Key Issues in the Determination

Our decision includes but is not limited to the following:

- Air quality and emissions:
  - Oxides of Nitrogen (NO and NO2 expressed as NO2)
  - Carbon monoxide (CO)
  - Particulate Matter (dust)
  - Total Volatile Organic Carbon (TVOC)
- Best available techniques

This will be discussed separately below in this decision document.

4.2 Operation of the Facility – general issues

4.2.1 Administrative issues

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

Relevant Convictions

NRW's COLINS Database has been checked to ensure that all relevant convictions have been declared. No relevant convictions were declared or found.

Financial Provision

There is no known reason to consider that the operator will not be financially able to comply with the permit. The decision was taken in accordance with RGN 5 on Operator Competence.

4.2.2 Management

The Applicant has stated in the Application that they will implement an Environmental Management System (EMS) that will meet the requirements for an EMS in our "*How*

to comply with your environmental permit guidance". The Applicant submitted a summary of the EMS with their application. The applicant has an EMS which is externally certified to ISO14001, certificate BM Trada 2937. Certification scope will be expanded to cover all activities associated with the SWIP.

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

4.2.3 Operating techniques

We have reviewed the operating techniques used by the Operator and compared these with the relevant guidance notes. The relevant guidance notes for this plant are:

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

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.

The operator has stated that they will implement the following quality assurance techniques and maintenance schedule, in order to for the plant to achieve and retain optimal performance. In order to enable the facility to achieve and retain optimal performance in both efficiency and emissions, the plant will engage in best available operational management techniques including the following, with more detail available in the application documentation:

- ISO 14001 certified management system
- Computer control with modulating Oxygen control to ensure stable combustion at low and high output levels
- Programmable Logic Control (PLC) which automatically adjusts key operational parameters to maintain efficient combustion based on data from process control instrumentation
- Fault detection and automatic fail-safe shut down / lock out system which requires competent operator or engineer to restart the process in the event of breakdown

- 24/7 on-site presence, automatic fault reporting via telephony to competent person, remote management /intervention by supplier approved engineer
- Combustion air control for pollutant control including primary, secondary and tertiary air adjustment and flue gas recirculation for control of formation of nitrogen oxides
- Self-cleaning heat exchanger and automatic de-ashing to ensure that the biomass boiler works at optimum efficiency at all times
- Use of supplementary gas oil (diesel) fuel combustion on start-up until operation temperature is reached – about 10 minutes
- Preventative maintenance and cleaning schedule based on manufacturers recommendations
- Daily inspections

We have reviewed the techniques used by the Operator and compared these with the relevant guidance notes. The proposed techniques are in line with benchmark techniques contained within the relevant guidance notes.

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

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

As a Schedule 1, Part 2, Chapter 5, Section 5.1, Part B, (a) (v) activity of the Environmental Permitting Regulations (England and Wales) 2016 the relevant operating techniques and permit conditions are:

- Unless otherwise agreed in writing, the combustion plant 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 Tables S1.2 in the permit and assessed conformance of proposals with the Final Draft Environmental Permitting Technical Note 5/1 (18) for waste wood incineration/combustion.

5 Minimising the Facility's environmental impact

For this kind of regulated activity, the principal emissions are emissions to air. There are no permit conditions for water, land, odour or noise. BAT does apply but only for emissions to air. We have assessed the applicant's proposals for the facility with BAT as described in the Final Draft Environmental Permitting Technical Note 5/1 (18) for waste wood incineration/combustion. We are satisfied that in all respect, the operators proposals (*including proposed fuel, combustion and abatement equipment selection, design and operation, management techniques, emissions monitoring, pollutant release, dispersion and impact, maintenance and cleaning, training and competence*) are BAT for the class of facility permitted.

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

We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory. The assessment shows that, applying the conservative criteria in our guidance on Environmental Risk Assessment, the impact of all emissions at receptors may be categorised as either environmentally insignificant, or in the few instances where they cannot automatically be considered insignificant, are unlikely to cause exceedance of air quality standards/objectives.

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

5.1 Assessment of Impact on Air Quality – potential human health impacts

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

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

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.

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 Permitting Service. The site is not located within (nor close to) an AQMA, and nor is it located in or near a site identified in the Clean Air Plan for Wales as being of particular sensitivity in respect of airborne pollutants.

The applicant has modelled emissions using the atmospheric dispersion model ADMS 5.2, a commonly used and widely accepted tool for this type of study. Five years of meteorological data from 2016-2020 have been used from Hawarden Airport weather station, approximately 16 Km to the north north-west of the site. The model has been set up with consideration for surrounding geography (terrain, influence of specific surrounding buildings and general ground use cover – *used to select model "surface roughness" parameter*). Where it has been necessary to consider pollutant background concentration, Defra 1 x 1 Km background mapped concentrations have been used, based on forward projections for 2021 from the most recent measurement data (*2018 measurements for most pollutants, 2001 and 2010 for CO and Benzene respectively*). We agree that the approach is reasonable, and contains a number of conservative (worst case) assumptions, i.e. the use of Emission Limit Value (ELV) emission concentrations when actual emissions will typically be lower, assumed 24/7/365 operation, the use of results from the highest of 5 years of metrological data.

The applicant has identified specific nearby residential and non-residential receptors which may be impacted by the proposed facility and its emissions to air. These are shown in figures in the application. We agree that the receptors which would be exposed to the highest impact have been identified. Using the modelling outlined above, the applicant has calculated maximum impacts of aerial pollutants both at these specific receptor locations, and the maximum point value within the modelled domain. Impacts are expressed as process contributions (PC) and predicted environmental concentrations (PEC).

PCs indicate the scale of impact from the facility, while PECs take into account existing pollutant backgrounds (from other sources) as well as the proposed emissions in order to predict the total impact on the environment as compared with relevant long-term and short-term Environmental Standards (ES) and expressed as a percentage of the ES. Relevant ES for the protection of human health were identified from relevant regulation, as summarised in the guidance "air emissions risk assessment for your environmental permit". The modelling results for NO_X, particulate matter, Total Volatile Organic Carbon (TVOC), and CO will be discussed separately below.

It is noted that the maximum pollutant concentrations "on the modelled grid" will occur close to the emission point sources on the site, and are not representative of human or ecological exposure, but illustrate the worst-case emission impact. The modelled grid is a 4km x 4km study area (*at 20 m resolution*), with the site approximately at the centre, selected to ensure that the maximum impact of the facility is identified. Impact assessment is, however, considered primarily at identified receptors.

Oxides of nitrogen (NO_X)

The long-term Environmental Standard of 40 µg/m^3 (annual) and short-term Environmental Standard of 200 µg/m^3 (hourly) apply for NO_X (as NO_2).

The maximum predicted long-term PC was >1 % (*3. 9% at commercial property, 0.89 % at residential, 1.5 % at other sensitive receptor – day nursery, and 46 % at maximum point on modelled grid*) so could not be considered insignificant against a 1 % significance threshold at receptors for long term ES. The maximum long-term PEC was <70 % (*21 % at commercial property, 18 % at residential, 19 % at other sensitive*

receptor– day nursery, 63 % at maximum point on modelled grid) of the long-term critical level. Therefore in accordance with NRW guidance the long-term impacts from NO_X can be considered as insignificant as the PEC is significantly below the ES at all modelled locations.

The maximum predicted short-term PC was >10 % within the modelled grid (24 % at point of maximum impact) but <10 % at the most impacted receptors (*5.4 % at commercial property, 3.3 % at residential, 2.1 % at other sensitive receptor – day nursery*) so can be considered insignificant against a 10 % significance threshold at receptors for short-term ES. It is also noted that the maximum short-term PEC was 31 % at maximum point on modelled grid of the short-term critical level, demonstrating a comfortable margin between expected pollutant levels and relevant ES, and hence an insignificant impact at all points in the modelled domain.

Particulate Matter (PM_{10} and $PM_{2.5}$)

Environmental limits for particulate are based on particle size, as risk of harm to health generally increases with decreasing particulate size. Limits exist for PM_{10} and $PM_{2.5}$ – particulate of aerodynamic diameter less than 10 µm and 2.5 µm respectively. The long-term Environmental Standard of 40 µg/m^3 (annual) and short-term Environmental Standard of 50 µg/m^3 (hourly) apply for PM_{10}. For $PM_{2.5}$ there is a long-term standard only, of 20 µg/m^3 (annual). As the detailed size distribution of particulate emissions from the facility is unknown, the applicant has made the conservative assumption for modelling purposes that all of the particulate matter emitted is PM_{10} or $PM_{2.5}$ respectively, for assessment of PC and PEC against ES. Actual pollutant emissions will be lower than this.

The maximum predicted long-term PM_{10} PC was >1 % *(4.5 % at maximum point on modelled grid*) so could not automatically be considered insignificant against a 1 % significance threshold at receptors for long term ES. However, the maximum PC at receptors was <1 %, so the maximum impact could be considered insignificant (0.*39 % at commercial property, 0.09 % at residential, 0.15 % at other sensitive receptor – day nursery*). Furthermore the maximum long-term PEC was <70 % (*28 % at commercial property, 27 % at residential, 28 % at other sensitive receptor– day nursery, 32 % at maximum point on modelled grid*) of the long-term critical level.

Therefore in accordance with NRW guidance the long-term impacts from PM_{10} can be considered as insignificant as the PC is insignificant at all sensitive receptors and the PEC is significantly below the ES at all modelled locations.

The maximum predicted short-term PC for PM_{10} was <10 % within the modelled grid (5.5 % at point of maximum impact) and hence <10 % at the most impacted receptors (*0.94 % at commercial property, 0.26 % at residential, 0.35 % at other sensitive receptor – day nursery*) so can be considered insignificant against a 10 % significance threshold at all points of impact for short-term ES. It is also noted that the maximum short-term PEC was 44 % at maximum point on modelled grid of the short-term critical level, demonstrating a comfortable margin between expected pollutant levels and relevant ES, and hence confirming an insignificant impact at all points in the modelled domain in respect of both PC and PEC.

The maximum predicted long-term $PM_{2.5}$ PC was >1 % (*9*.1 %) at the maximum point on the modelled grid) so could not be considered insignificant against a 1 % significance threshold at receptors for long term ES, and the applicant did not express $PM_{2.5}$ PCs at specified receptors. The maximum long-term PEC was <70 % (*44 % at maximum point on modelled grid*) of the long-term critical level. Therefore in accordance with NRW guidance the long-term impacts from $PM_{2.5}$ could be considered as insignificant as the PEC is significantly below the ES at all modelled locations.

It was, however, possible for NRW to calculate $PM_{2.5}$ PC and PEC at receptors from data provided by the applicant (assuming all emissions of particulate were 100 % PM_{10} and $PM_{2.5}$, and noting that the ES for $PM_{2.5}$ is half that for PM_{10}, hence PC percentage of $PM_{2.5}$ ES are twice the PM_{10} percentage PC. The maximum predicted long-term $PM_{2.5}$ PC was <1 % (0.8 *% at commercial property, 0.2 % at residential, and 0.3 % at other sensitive receptor – day nursery*) so could be considered insignificant against a 1 % significance threshold at receptors for long term ES. The maximum long-term PEC was <70 % (*28 % at all of commercial property, residential, and other sensitive receptor– day nursery, PEC dominated by background*) of the long-term critical level. Therefore in accordance with NRW guidance the long-term impacts from $PM_{2.5}$ can be considered as insignificant at receptors on basis of both the PC as well as the PEC.

TVOC

TVOC is a measure of emissions of carbon-containing chemicals from processes. In the case of combustion sources such as this, it is a measure of unburned hydrocarbons in the exhaust gases. TVOC is also known as VOC (volatile organic compounds) or TOC (total organic carbon). There are no specific ES for TVOC, VOC or TOC. Therefore to compare projected emissions against environmental standards, our guidance requires that applicants assume all TVOC emissions to be benzene, as this is a specific VOC, with a very low ES as it is one of the most harmful VOCs. This is therefore a very conservative assessment, as not all (if any) of the emissions of TVOC from the source will be benzene, and if other substances, will be less harmful to receptors – the figures quoted below describe the theoretical maximum impact, with actual benzene emissions expected to be far lower.

The long-term Environmental Standard of 5 µg/m^3 (annual) and short-term Environmental Standard of 30 µg/m^3 (24-hour) apply for benzene.

The maximum predicted long-term PC for TVOC and assumed to be benzene was >1 % (1.9 *% at commercial property, 0.43 % at residential, 0.72 % at other sensitive receptor – day nursery, and 22 % at maximum point on modelled grid*) so could not be considered insignificant against a 1 % significance threshold at receptors for long term ES. The maximum long-term PEC was <70 % (*4.9 % at commercial property, 3.4 % at residential, 3.7 % at other sensitive receptor– day nursery, 25 % at maximum point on modelled grid*) of the long-term critical level. Therefore in accordance with NRW guidance the long-term impacts from TVOC can be considered as insignificant as the PEC is significantly below the ES at all modelled locations.

The 24-h average Benzene ES is a new requirement, following regulatory consultation in 2021. The applicant did therefore not model short term benzene impacts in their main report. Additional information on benzene impact was provided as an addendum during permit determination (14/12/21). The maximum predicted short-term PC was 10.4 % within the modelled grid and hence could not be automatically considered insignificant against a 10 % significance threshold. The applicant calculated the PEC at the point of maximum impact, which taking into account background, was 11.4 % of the environmental standard and hence not significant. It is also noted that the PC

would be considerably less than 10 % at the most impacted receptors and hence could also considered insignificant against a 10 % significance threshold at receptors for short-term ES.

Carbon Monoxide (CO)

There is no long-term Environmental Standard for carbon monoxide. Short term Environmental Standards of 10 mg/m^3 (8h in 24h) and 30 mg/m^3 (hourly) apply for CO.

The maximum predicted short-term PC (8-hourly) was <10 % at all points within the modelled grid (0.45 % at point of maximum impact) and hence <10 % at the most impacted receptors (*0.07 % at commercial property, 0.004 % at residential, 0.001 % at other sensitive receptor – day nursery*) so can be considered insignificant against a 10% significance threshold at receptors for short-term ES. It is also noted that the maximum long-term PEC was 1.5 % at maximum point on modelled grid of the short-term critical level, demonstrating a comfortable margin between expected pollutant levels and relevant ES, and hence an insignificant impact at all points in the modelled domain.

The applicant did not submit 24-h average CO impact predictions with their application. However, as explained in our air emissions guidance, a simple calculation can be used to interconvert short term impacts. To convert from 8-h to 24-h average the result is divided by 0.7. The maximum predicted 24-hour PC on the modelled grid was therefore calculated by NRW as 0.2 % of the ES. This is well below the <10 % significance threshold for short-term critical level, The PEC for the 24-hour average is 0.6 % of the ES. Therefore in accordance with NRW guidance all impacts from CO can be considered insignificant. It is well established that if the 8-h CO limit is met, then the 24h limit will also be met, which is a possible reason that the applicant did not provide this further information.

5.2 Impact on Habitats sites, SSSIs, 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. Influence on Special

Areas of Conservation (SAC), Special Protection areas (SPA) and Ramsar sites, SSSIs and non-statutory conservation sites will each be discussed in detail below.

SAC/SPA/Ramsar sites

The following SAC/SPA/Ramsar sites (Formerly "Natura 2000", now "Emerald Network Sites") are located within 10 km screening distance of the facility:

- SAC UK003025 River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid
- SAC UK0030173 Johnstown Newt Sites SAC
- Ramsar UK11080 Midland Meres & Mosses Phase 2

An OGN 200 Form 1 (Habitats Regulation Assessment) was completed to assess the potential to affect the Natura 2000/Ramsar sites, this is available on the public register. This details the assessment made of potential for impact of the MCP on the protected sites.

Assessment of Likely Significant Effect:

The project has been screened for likelihood of significant effects and, taking account of the advice received from protected sites advisors, is considered not likely to have a significant effect on any Emerald Network site, either alone or in combination with other relevant permissions, plans and projects. Further details are available in the completed OGN 200 - Form 1, and in the response from protected site advisors OGN 200 - Form 2. As the protected sites fall within the responsibility both of Wales (NRW) and England (Natural England) the consultation was sent to both Statutory Nature Conservation Bodies.

SSSI Assessment

The following Site of Special Scientific Interest (SSSI) is located within 2 km of the installation:

- 31WDW Afon Dyfrdwy (River Dee)

An Appendix 4 assessment form was completed to assess the potential to affect the SSSI site. The assessment concluded the installation is not likely to damage any of the features of the SSSI site. The assessment has been sent to the NRW Environment Team as the appropriate statutory consultee. They have accepted the conclusions of the assessment. Further detail of the assessment and its conclusions are contained in the Appendix 4 form, which is available on the public register.

Non-statutory conservation sites

The following locally designated conservation or wildlife sites are within 2km screening distance of the MCP:

- Peter's Dingle (W319 – identified as ancient woodland in the application)
- Wrexham Industrial Estate (W337 – including areas referred to as Bryn Lane and Cefn Park in the application)

There are also a number of disperse areas of woodland, including protected ancient woodland. These are identified in the application. A long term Ecological Environmental Standard of 30 µg/m^3 (annual) and short-term Environmental Standard of 75 µg/m^3 (hourly) was used for NOx for all of these sites. For these sites, impact is deemed insignificant if the PC is less than 100 % of the ES. In this case, the maximum PC at any point in the modelled domain was 61 % annual average and 65 % of the hourly average. The highest impact at one of these designated receptors was 1.5 % annual average (Wrexham industrial estate – Bryn Lane) and 6.1 % hourly average (Wrexham industrial estate- Cefn Park). Thus the impact of emissions of NO_X are considered insignificant.

It is also necessary to consider the potential impact of emissions on Nutrient Nitrogen Deposition and Acid Deposition on relevant critical loads. Given that the PC for NOx is substantially below 100 % as illustrated, and that this is the only emitted pollutant contributing to deposition, it follows that the PC for deposition metrics must also be below 100 % of the ES, given the nature of the deposition dynamics. Although further detailed calculation is not required, the applicant has provided these, and indicates that the maximum PC at receptors is 0.43 % (Nutrient Nitrogen – Bryn Lane) and 0.1 % (Acidification – Cefn Park). We have not confirmed the acid and nitrogen deposition critical loads in detail for every receptor, as it is clear that even if the highest habitat sensitivity were applied, the impacts would still be insignificant.

6 Setting ELVs and other Permit conditions

We have decided that emission limits should be set for the parameters listed in the permit. Emissions Limit Values (ELVs) are in line with those set out in the MCP Directive and draft Technical Guidance Note 5/1 (18). As noted above, gas oil will be used during start-up until operational temperature is reached (approx. 10 minutes).

However the amount of oil used will be negligible in terms of total fuel load, and is not relevant to the ELV applied. The operator estimates that oil will be <0.02 % of the total fuel load, and the permit prohibits its use beyond boiler start-up.

6.1 Monitoring

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

Emission limit values are defined at a temperature of 273.15 K, a pressure of 101.3 kPa and after correction for the water vapour content of the waste gases and at a standardised O_2 content of 6 % for solid fuels.

For emissions to air, the methods for continuous and periodic monitoring are in accordance with the Environment Agency's Technical Guidance Note M5 for monitoring of stack gas emissions from medium combustion plants and specified generators. Based on the information in the Application and the requirements set in the conditions of the permit we are satisfied that the monitoring techniques, personnel and equipment employed by the Operator will have either MCERTS certification or MCERTS accreditation as appropriate.

6.2 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 Charges and Subsistence Fees

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

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 official consultation responses have been placed on Natural Resources Wales public register.

1) Consultation Responses from Statutory and Non-Statutory Bodies

Response Received from Wrexham County Borough Council / Cyngor Bwrdeistref Sirol Wrecsam	
Brief summary of issues raised:	**Summary of action taken / how this has been covered**
No concerns raised relating to MCP – information provided on permitting progress by local authority of related James Jones manufacturing activity	Part B permit number WCBC/PG6/2/JJ incorporated into MCP permit under heading “other installation permits relating to this installation”

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

No responses were received from other organisations or individuals in relation to this permit application