NON-TECHNICAL SUMMARY

Increased Tonnage Permit Variation Application

Prepared for: enfinium Parc Adfer Operations Limited

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1.0 Introduction

SLR Consulting Limited (SLR) has been instructed by enfinium Parc Adfer Operations Limited (PAOL) to prepare an application for a substantial variation of the bespoke Environmental Permit (EP) (EPR/AB3092CV) for the Parc Adfer Energy Recovery Facility, Deeside Industrial Park, Flintshire, CH5 2LL, for submission to Natural Resources Wales (NRW).

The PAOL installation is currently permitted for the incineration of waste to generate energy. The installation is a Part A(1) activity as described in the Environmental Permitting (England and Wales) Regulations (EPR) 2016 (as amended).

The EP variation application does not alter any of the above activities carried out on site but increases the maximum annual tonnage of waste that can be processed on site.

This non-technical summary (NTS) provides an explanation of the proposed changes to the original EP application and the various assessments that have been carried out.

The EP variation application comprises the following elements:

- Application forms (Parts A, C2, C3 and F1)
- Non-technical Summary
- BATOT Report
- Air Emissions Risk Assessment

1.1 The Site

The site is located to the south east of the Dee Estuary within the Deeside Industrial Estate, 2km south west of the nearest village, Puddington. The site is on an area of brownfield reclaimed land, once consisting of tidal mudflats of the Dee Estuary that was previously part of the Shotton Steelworks facility. The operator has constructed new bespoke buildings to house the proposed waste management activities. Farmland and areas of open space lie approximately 50m to the north of the permit boundary. The Borderlands railway line is adjacent to the east of the site. There are Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SACs) and Inshore Special Protection Areas with Marine Components (ISPAMs) within 2km of the site boundary.

The site is centred on National Grid Reference SJ 310 716. The surrounding land use is predominantly industrial. Immediately adjacent to the site lies Shotton Mill paper mill and Great Bear Distribution.

Access to the site is via Weighbridge Road which runs parallel and adjacent to the western boundary of the site. Weighbridge Road can be accessed off the A548 located north of the site. The A548 links to the A494/A550 to the east of the industrial estate.

There are existing drainage ditches on site, and surface water drains running within 20m to the east and west of the site's boundary.

1.2 Overview of Existing Permitted Operations

The PAOL ERF is currently permitted for the incineration of a maximum 200,000 tonnes of waste per year under Section 5.1 Part A(1) (b) and Section 5.4 Part A(1) (b) (iii). The permit implements the requirements of the EU Directives on Industrial Emissions and Waste.

2.0 Environmental Permit Variation Application

2.1 Processing Capacity

Following a change in boiler design during the construction of the installation, the processing capacity of the plant increased to 29 tonnes of waste per hour, from 25 tonnes per hour. The original EP application stated that the installation had a maximum annual tonnage of 200,000 tonnes based on operating for 8,000 hours per year. This substantial permit variation seeks to increase the maximum annual tonnage of the installation to 232,000 tonnes based on 8,000 operating hours.

2.2 Scope

SLR have reviewed the information provided as part of the original EP application and concluded that the following aspects could be impacted by the proposed increase in annual capacity;

- Processing capacity;
- Facilities and Process description;
- Inventory of raw materials;
- Waste Handling, Recovery and Disposal;
- Control of Noise;
- Control of Odour;
- Control of Point Source Emissions to Air;
- Control of Dust and VOC;
- Control of Emissions to groundwater, surface water and sewer; and
- Greenhouse Gas Emissions and Global Warming Potential

and that these issues warrant further review.

3.0 Review

3.1 Processing Capacity

The information provided in the original environmental permit application Section 6, Best Available Techniques and Operating Techniques (BATOT) document detailed the various capacities of the facility based on a maximum annual tonnage of 200ktpa. Sections 4.3 and 4.3.1 therefore need to be updated to reflect the increase in annual tonnage and associated tables 1 and 2 also require updating.

The increase in annual tonnage could result in an increased risk of accidents that may have environmental consequences from those assessed during the original environmental permit application. The risks originally identified in Section 3, BATOT document included:

- unauthorised waste receipt and processing;
- plant failure;
- fire;
- explosion
- asphyxiation and toxicity;
- loss of containment – spillage and leakage;
- security and vandalism; and
- flooding

Each of these risks was considered and mitigation measures proposed. These were accepted by Natural Resources Wales (NRW) as part of the original environmental permit determination. The mitigation measures remain robust and suitable to minimise the risks.

3.2 Facilities and Process Description

The information provided in the original environmental permit application Section 6, BATOT document contained a Facilities and Process description in Section 5. Sections 5.1.3 Plant Capacity, associated table 3 and associated Figure 2 require updating accordingly to reflect any impact on the combustion data resulting from the increase in annual tonnage.

Section 5.1.4 Facility Performance and associated Table 4 require updating, as the increase in annual tonnage will influence the plant performance.

Section 5.1.7 Assessment of BAT against BREF Note for Incineration Table 7 contains reference to an annual capacity of 200ktpa and a bunker capacity of 10 days storage, this should be updated to reflect the increase in annual tonnage to 232ktpa and the revised BREF note on Waste Incineration issued in December 2019. All other BAT requirements and proposed measures remain valid and were accepted by NRW as part of the original environmental permit determination and subsequent environmental permit variation application.

3.3 Inventory of raw materials

The information provided in the original environmental permit application Section 6, BATOT document detailed the Raw Materials to be used at the ERF in Section 7. Section 7.1 associated Table 8 requires updating accordingly to reflect increase in raw material consumption resulting from the increase in annual capacity.

3.4 Waste Handling, Recovery or Disposal

The information provided in the original environmental permit application Section 6, BATOT document detailed how the various waste types generated at the ERF will either be recovered or disposed of. An increase in annual capacity will result in a proportional increase in the amount of the various wastes produced. All waste types generated have dedicated storage arrangements of suitable volume and disposal or recovery options identified in associated Table 9.

The waste handling, recovery and disposal options proposed appear to be robust and remain valid considering the proposed increase in annual capacity. No further action is proposed.

3.5 Control of Noise

Noise and vibration were assessed as part of the original permit application in Section 6, BATOT document in Section 11 and a noise assessment was conducted as part of Section 8. The noise assessment used BS 4142 and concluded that the noise complaints were unlikely to be received from the nearest sensitive receptors. The number of deliveries of waste to the facility will increase as a result of the increase in annual tonnage, however the noise levels associated with these deliveries will be consistent with the noise levels already assessed.

We have consulted our Acoustic team who conducted the original assessment and they confirmed that as the only factor which is increasing is the amount of waste delivered to site, there being no changes to plant layout or plant and equipment design, then the original conclusions remain valid.

The control of noise mitigation measures proposed by the ERF operator and associated permit condition 3.4, specifying the measures to be taken if a noise issue arises, minimise the likelihood of noise complaints. We consider that no further action would be required.

3.6 Control of Odour

Odour was assessed as part of the original permit application in Sections 6, BATOT document in Section 12 and an Odour Management Plan was submitted as part of Section 8. With an increase in the tonnage of waste received at the facility for processing, there is an increase in the potential for odour issues. However, the odour control measures originally proposed in the Odour Management Plan are robust and remain valid for the proposed increase in annual capacity.

We have consulted our Air Quality team who compiled the original Odour Management Plan and they confirmed that the Operating Techniques and Odour Management Plan and associated permit condition 3.3, specifying the measures to be taken by the Operator if odour issues arise, should ensure the potential for odour complaints is minimised. No further action is required.

3.7 Control of Point Source Emissions to air

Pre-application discussions were held with NRW focussing on the air emissions assessment. As a consequence of these discussions, three different modelling scenarios have been produced:

- As originally Permitted scenario (200ktpa);
- Existing operation, minor Permit variation scenario representing the as built boiler with Permit emission limit values (ELV) (200kpta) (termed the 'Existing Operational Scenario'); and
- Permit variation scenario representing the as built boiler with BAT-AELs (232ktpa) (termed the 'Permit Variation Scenario').

The Atmospheric Dispersion Modelling / AERA is included as Section 6 to this application and has quantified and assessed the potential air quality impacts associated with combustion emissions from the Installation operating at the Permit Variation Scenario (232ktpa) and based upon the application of BAT-AELs prescribed within Implementing Decision 2019/20207 to the Waste Incineration BREF8, using NRW approved techniques against published standards for the protection of human health and designated ecological sites.

The conclusions of the Atmospheric Dispersion Modelling / AERA are as follows:

- maximum ground level short-term PCs arising from the Permit Variation Scenario are <10% of the applied EAL for all considered pollutants / short-term averaging periods and, therefore, 'insignificant' in accordance with the AERA guidance. There are no predicted exceedences of any short-term standard. In comparison to the Existing Operational Scenario, the Permit Variation Scenario results in a reduction in maximum PCs;
- maximum ground level long-term PCs arising from the Permit Variation Scenario of PM (assessed as PM10 and PM2.5), HF, TOC (assessed as C6H6), Cd, Hg, Sb, Cr, Cr (VI), Cu, Pb, Mn, V and NH3 are <1% of the applied EAL and, therefore, 'insignificant' in accordance with the AERA guidance. Annual mean PCs of NO2, As and Ni are >1% of the applied EAL. However, in comparison to the Existing Operational Scenario, the Permit Variation Scenario results in a reduction in maximum PCs;
- maximum ground-level PCs arising from the Permit Variation Scenario to the NOx CLe at ecological receptors ER2 – ER4 and ER7 result in 'no likely significant effects (alone and in-combination)' (at SAC / SPA designations) and 'no likely damage' (at SSSI designations). Maximum ground-level PCs arising from the Permit Variation Scenario to the NOx CLe are >1% of the NOx CLe at ecological receptors ER1, ER5 and ER6;
- result in 'no adverse effect' (at SAC / SPA) designations and 'no significant pollution' (at SSSI designations). However, in comparison to the Existing Operational Scenario, the Permit Variation Scenario results in a reduction in maximum PCs;

- maximum ground-level PCs arising from the Permit Variation Scenario to the 24-hour mean NOx, annual mean NH3, annual mean SO2 and 24-hour mean HF CLes result in 'no likely significant effects (alone and in-combination)' (at SAC / SPA designations) and 'no likely damage' (at SSSI designations);
- maximum ground-level PCs arising from the Permit Variation Scenario to the nutrient nitrogen CLo are >1% of the applied 'Coastal stable dune grasslands - acid type' APIS relevant critical load class at ER1 and ER5. However, impacts for the existing operational site (200ktpa) are above 1% and were previously concluded by NRW to result in no significant effect. At all other ecological designations, the maximum ground-level PCs to the nutrient nitrogen CLo are <1% of the applied CLo and result in 'no likely significant effects (alone and in-combination)' (at SAC / SPA designations) and 'no likely damage' (at SSSI designations). Further, in comparison to the Existing Operational Scenario, the Permit Variation Scenario results in a reduction in maximum PCs; and
- maximum ground-level PCs arising from the Permit Variation Scenario to the acid CLo result in 'no likely significant effects (alone and in-combination)' (at SAC / SPA designations) and 'no likely damage' (at SSSI designations). Further, in comparison to the Existing Operational Scenario, the Permit Variation Scenario results in a reduction in maximum PCs.

3.8 Control of Dust and VOC

Dust and VOC emissions were assessed as part of the original environmental permit application Section 6, BATOT document in Section 14. The handling and processing of wastes at the ERF have the potential to generate dust and bio-aerosols and an increase in the annual capacity of the facility could result in an increased potential to generate dust and bio-aerosols. However, the enclosed nature of the process and the mitigation measures employed at the facility, mean that the risks are minimised.

The facility does not generate significant fugitive emissions of VOCs as hydrocarbon usage is minimal and these materials are fully contained, operating procedures and techniques also restrict the potential for fugitive emissions to a minimum, therefore no further action is required.

3.9 Control of emissions to groundwater, surface water and sewer

Emissions to groundwater, surface water and sewer were assessed as part of the original environmental permit application Section 6, BATOT document in Section 15. The proposed increase in annual capacity could potentially result in an increased risk groundwater, surface water and sewer, however the measures in place mean that the risks are minimised.

The containment measures in place mean that there are no point sources or fugitive emissions to groundwater. The main point source for emissions to surface water was the proposed IBAA processing area, however the Operator has decided to send the IBA off-site for processing and the material will now be stored on site in dedicated covered storage bays, thus minimising the potential for emissions to surface water. There are no discharges of process water to sewer.

The existing containment measures and permit conditions 3.5.1, which specifies the monitoring the Operator must undertake on emissions to surface water mean the potential emissions to groundwater, surface water and sewer are minimised and controlled, therefore no further action is required.

3.10 Greenhouse Gas Emissions and Global Warming Potential

Emissions of greenhouse gases and the Global Warming Potential were assessed as part of the original environmental permit application Section 6, BATOT document in Sections 19, 21 and Appendix BATOT2. The proposed increase in annual capacity will result in an increase in the emissions of greenhouse gases and hence Global Warming Potential.

The original appendix BATOT2 requires updating to reflect the proposed increase in annual capacity; this is included in the BATOT Addendum accompanying this permit variation application.

4.0 Conclusion

The increase in maximum annual tonnage from 200,000 to 232,000 tonnes will have an insignificant impact. All potential impacts and scenarios have been assessed either as part of the original EP application, subsequent variation and this substantial variation application.

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