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Consulting Engineers Limited

Portland Energy Recovery Facility

Powerfuel Portland Limited

Environmental Risk Assessment

ENGINEERING CONSULTING

Document approval

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Contents

1 Introduction

Powerfuel Portland Limited (Powerfuel) is proposing to build the Portland Energy Recovery Facility (the Facility) at a site within Portland Port on the Isle of Portland, Dorset. The Facility will incinerate refuse derived fuel (RDF) produced from domestic (municipal solid waste) and commercial & industrial (C&I) non-hazardous waste.

An assessment of the environmental risks associated with the activities undertaken at the Facility Is presented within this report.

Within the Environmental Permit (EP) application, Powerfuel is required to demonstrate that the necessary measures are in place to protect the environment and ensure that the Facility, throughout its life, will not pose an unacceptable risk to the environment.

The aim of this report is to:

a. identify potential risks that the activity may present to the environment;
b. screen out those that are insignificant and don't require detailed assessment;
c. identify potentially significant risks, where appropriate;
d. choose the right control measures, where appropriate; and
e. report the findings of the assessment.

This document has been developed to consider the requirements of Environment Agency Guidance Notes H1 Annexes A, C, H and F. It is acknowledged that these guidance documents have been withdrawn; however, it is understood that the requirements of the guidance are still applicable.

1.1 Risk Assessment Process

This assessment has been developed in accordance with the Environment Agency Guidance Note H1. This guidance promotes four key steps:

1. identify risks from the activity;
2. assess the risks and check that they are acceptable;
3. justify appropriate measures to control the risks; and
4. present the assessment.

1.2 Step 1 – Identify Risks

The following report will identify the activities that present different types of risk to the environment associated with the operation of the Installation, including:

a. odour;
b. noise;
c. fugitive emissions; and
d. accidents.

1.3 Step 2 – Assess the Risk

The report will include an assessment of risks associated with the operation of the Installation, and will identify the:

a. hazard;

b. receptor; and
c. pathway.

1.4 Step 3 – Justify Appropriate Measures

This report will demonstrate that the risks associated with the operation of the Installation have been considered and identify the control measures which will be in place to demonstrate that the risks are being appropriately managed.

1.5 Step 4 – Present the Assessment

The assessment will conclude by presenting the following:

a. possibility of exposure;
b. consequence; and
c. the overall risk.

The report will present the overall risk applying the Environment Agency's H1 criteria, defined as:

a. insignificant;
b. not significant; and
c. significant.

2 Table A1 – Odour Risk Assessment and Management Plan

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
Odorous emissions may occur during the delivery of waste, reception of waste and the storage and handling of waste prior to processing	Immediate area. The nearest residential receptor to the installation is located approximately 600 m west of the installation boundary.	Air- Winds generally blow from a south westerly direction.	All wastes received at the Facility will be unloaded inside the enclosed waste reception area. Wastes will be processed on a first-in, first-out principle. The reception hall will be retained at negative pressure. Potentially odorous air within waste reception area will be combusted within the ERF.	Minimal.	Odour annoyance will have more impact in the summer, when temperatures are higher and people are outdoors and more likely to be exposed to odour.	Not significant if managed well.
Odorous emissions may occur during periods of shutdown	Immediate area. The nearest residential receptor to the installation is located approximately 600 m west of the	Air- Winds generally blow from a south westerly direction.	During periods of shutdown, waste stored within the waste reception area will be minimised.	Minimal	Odour annoyance, which will more impact in the summer, when temperatures are higher and people are outdoors and	Not significant due to abatement and management systems in place.

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
	installation boundary.				more likely to be exposed to odour.	

3 Table A2 – Noise and Vibration Risk Assessment and Management Plan

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
Noise from plant items such as the waste treatment processes, heat recovery boiler, exhaust air fans, stack exhaust, steam turbine, cooling condensers and noise radiation from the building envelope itself, etc.	Immediate area. The nearest residential receptor to the installation is located approx. 600 m west of the installation boundary.	Sound propagation through air and the ground.	Noisy plant items, where practicable, will be installed inside buildings rather than outside and, where appropriate, they will be fitted with noise insulation. The installation will be designed to reduce noise and tonal components. Regular maintenance of plant items.	Minimal.	Annoyance.	Not significant. Refer to Appendix C of the Application (Noise Assessment) for further information on the impact of noise from the operation of the Facility.
Noise from vehicle movements.	Immediate area. The nearest residential receptor to the installation is located approx. 240m southwest of the	Sound Propagation through air and the ground.	Waste deliveries will typically occur during day-time periods.	Minimal.	Annoyance.	Not significant. Refer to Appendix C of the Application (Noise Assessment) for further

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
	installation boundary.					information on noise impacts.

4 Table A3 – Fugitive Emissions Risk Assessment and Management Plan

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
Emission releases from the main building when opening and closing doors.	Immediate area – air.	Air, surface runoff, direct contact.	All waste and residue handling activities will be undertaken within enclosed buildings.	Low.	Nuisance, dust on clothing and cars.	Insignificant.
Spillage of waste during delivery and offloading.	Immediate area – air, land, water.	Air, surface runoff.	Incoming baled waste will be delivered to the site wrapped. All waste unloading activities will be undertaken within enclosed buildings.	Low.	Nuisance and dust.	Insignificant.
Dust from waste deliveries being blown off-site.	Immediate area – air, land.	Air, surface runoff.	Incoming waste will be delivered in enclosed waste delivery vehicles. Incoming baled waste will be delivered to the site wrapped.	Low.	Nuisance and dust.	Insignificant.

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
			All waste unloading activities will be undertaken within enclosed buildings.			
Bottom ash discharge from the Facility.	Immediate area – air.	Air, surface runoff, direct contact.	Once removed from the combustion chamber by the bottom ash extractors, the bottom ash is then discharged to an ash quench system, prior to storage in an IBA storage area.	Low.	Nuisance.	Insignificant.
Discharge of Air Pollution Control residues (APCr) when emptying the APCr silo.	Immediate area – air, land.	Air, surface runoff, direct contact.	When unloading the APCr silo, the displaced air from the tanker will be recirculated into the silo to prevent releases into the atmosphere.	Low.	Nuisance, release of hazardous dust.	Insignificant.
Reagent and chemical discharges when filling silos.	Immediate area – air.	Air, surface runoff, direct contact.	Reagents will be delivered in sealed tankers and off-loaded via a standard hose connection. Air displaced from the silo will be discharged through fabric	Low.	Nuisance.	Insignificant.

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
			filters on the top of the silo. Regular inspections and maintenance of abatement equipment. Unloading activities will only be undertaken in areas of hard standing with contained drainage.			
Lime leak during injection into APCr system.	Immediate area – air.	Air, surface runoff, direct contact.	Systems are enclosed, and regular inspections & maintenance will be carried out. Reagent will be injected via an enclosed dosing and conveying system.	Low.	Nuisance.	Insignificant.
Spillage of APC reagents when capping or changing filter bags.	Immediate area – air, land.	Air, surface runoff, direct contact.	Enclosed system. Kept under suction by the ID fan. The fabric filter will have a number of cells. When capping or changing bags, the relevant cell will be shut down for a sufficient time to enable the dust to settle.	Low.	Nuisance, release of hazardous dust.	Insignificant.

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
Spillage/leak of liquid chemicals when tanker off-loading.	Immediate area – air, land.	Air, direct contact.	Deliveries will be from sealed tankers and off-loaded via a hose. Spillage will be prevented by good operating procedures, high tank level alarm/trips etc. Tanks will be located within suitably designed secondary containment with sealed drainage systems.	Low.	Liquid or vapour release.	Insignificant.
Spillage/leak when unloading from delivery vehicles chemical containers (IBC's, FIBC's, drums, etc).	Immediate area – air, land.	Air, direct contact.	Deliveries will be from road vehicles and off-loaded via mobile plant. Potential leaks/spills will be prevented by experienced mobile equipment operators undertaking unloading activities. Unloading activities will only be undertaken in areas of hard standing with contained drainage. Chemical containers will be stored	Low.	Hazardous liquid or vapour release.	Insignificant.

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
			within suitably designed secondary containment with sealed drainage systems.			
Release off-site of litter.	Immediate area – air, land.	Air, direct contact.	Incoming baled waste will be delivered to the site wrapped. Loading/unloading of all waste vehicles will be within enclosed buildings.	Low.	Nuisance, dust on cars and road.	Insignificant.
Release of dusts from the transfer off-site of bottom ash.	Immediate area – air, land.	Air, direct contact.	Loading of bottom ash into vehicles will be undertaken within enclosed buildings. Bottom ash will be transferred off-site in covered road vehicles.	Low.	Nuisance, dust on cars and road.	Insignificant.
Re-suspension of dust from road surface, when site vehicles arrive/leave.	Immediate area – air, land, water.	Air, surface runoff.	Control speeds, maintain the condition of the road, and take due care and attention of trafficking conditions.	Low.	Nuisance, dust on cars and road.	Insignificant.

5 Table A4 – Accidents Risk Assessment and Management Plan

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
Spill during unloading of chemicals.	Immediate area – air, land, water.	Direct contact.	Training in unloading practices. Under manual control, continual observation. Impervious surfaces outdoors. Contained and sealed drainage for chemical handling areas.	Unlikely.	Low.	Not significant.
Overfilling of vessels.	Local environment air, land, water.	Surface runoff, wind.	Training in unloading practices. Under manual control, continual observation. Impervious surfaces outdoors. High level alarms. Secondary containment for storage vessels.	Unlikely.	Low.	Not significant.
Leak of water from treatment plant, and leak of boiler water treatment chemicals.	Immediate area – water.	Surface runoff	Secondary containment for storage vessels. Routine inspection and maintenance. Impervious surface indoors,	Unlikely.	Pollution of surface water.	Not significant.

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
			separate drains for process water.			
Flue gas leak.	Local environment – air.	Air.	Design standards. Inspection and maintenance programme. Controls and alarms for pressure. Most of the systems are retained at negative pressure.	Very unlikely.	Pollution of atmosphere, health impacts.	Not significant.
Fuel storage failure in the Facility.	Immediate area – litter.	Direct contact.	Storage of non-baled waste in a dedicated waste bunker. Baled waste will be stored within a dedicated Bale Storage Area.	Unlikely.	Litter.	Insignificant.
Control failure leading to combustion control upset.	Local environment – air.	Air - Winds generally blow from a south westerly direction.	Fuel inspection. Design of control system. Monitoring of combustion conditions. Maintenance of combustion air systems.	Unlikely,	Pollution of atmosphere (short term), human health impacts.	Not significant.
Failure of emission abatement equipment.	Local environment – air.	Air - Winds generally blow from a south westerly direction.	Regular maintenance, inspections. Redundancy of critical equipment or spares on stock.	Unlikely.	Pollution of atmosphere, human health impacts.	Not significant.

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
Failure of emission monitoring systems.	Immediate area – air.	Air - Winds generally blow from a south westerly direction.	Regular maintenance, inspections. Back-up CEMS system will be available.	Unlikely.	Lack of data, public concern.	Not significant.
Failure of containment (e.g. bund).	Immediate area – water, land.	Surface runoff, wind, leaching.	Regular inspections of bunds.	Unlikely.	Pollution of surface water.	Not significant.
Making the wrong connections to drains.	Local environment – water.	Direct contact, leaching.	Detailed site drainage plan, which will be available to all staff.	Low.	Pollution of surface water.	Not significant.
Preventing incompatible substances from coming into contact.	Immediate area.	Surface runoff, wind, direct contact.	Due care and attention.	Low.	Pollution of surface water, human health impacts.	Not significant.
Unwanted reactions.	Immediate area.	Surface runoff, wind, direct contact.	Due care and attention.	Unlikely.	Low.	Not significant.
Loss of power.	None.	N/A	Back-up generation for combustion control systems. Controlled shutdown of the water treatment plant.	Low.	None.	Not significant.
Loss of compressed air.	None.	N/A	Multiple compressors, backup power supplies.	Low.	None.	Not significant.

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
Loss of boiler water.	None.	N/A	Failsafe shutdown.	Low.	None.	Not significant.
Steam leak to plant building/atmosphere.	Noise, visual impact.	Air	Statutory design, fabrication and inspection standards for steam systems. Controls and alarms for pressure. Routine operator checks.	Low.	Nuisance from noise and visual impact.	Not significant.
Residues handling failure.	Immediate area – air, land, water.	Direct contact.	Training in residue handling practices. Contained transfer systems. Impervious surfaces in residue handling areas with designated sealed drainage systems in areas where residues are stored.	Unlikely.	Pollution of surface waters.	Not significant.
Fires in FGT bag filter.	Local environment.	Air - Winds generally blow from a south westerly direction.	Temperature measurement in filter, fire-fighting systems and detection systems.	Low.	Dust, pollution of air.	Not significant.
Fire in furnace / feed system.	Immediate area – air.	Air.	Furnace charging procedures / training. Level indicator in chute. Fire detection and fire-fighting systems.	Low.	Pollution of air.	Not significant.

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
Over pressurisation of the boiler.	Immediate area – air.	Direct contact.	The boiler will be fitted with a pressure release valve which will open to prevent the risk of an explosion within the boiler.	Low.	Pollution of air.	Not significant.
Fires in all waste reception storage and handling areas.	Immediate area – air.	Direct contact.	Fire detection systems, water sprinklers and fire hoses. Fire marshals.	Low.	Visual impact, pollution of air.	Not significant.
Fire from ignition of lube oil leak.	Immediate area – air.	Wind, direct contact.	Use of fire-proof lube oil. Fire detection and protection systems.	Low.	Visual.	Not significant.
Contaminated fire water.	Immediate area – water, land.	Surface runoff, leaching.	Site drainage for external areas will be fitted with an isolation system, to contain any firefighting water from external areas.	Low.	Pollution of surface water.	Not significant.
Failure to contain firewater.	Land.	Land, water, groundwater.	Maintenance of the shut-off penstock valve within the drainage system.	Unlikely.	Release of chemicals to water.	Not significant.

What Do You Do That Can Harm and What Could Be Harmed?			Managing The Risk	Assessing The Risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Possibility of Exposure**	**Consequence**	**What is the Overall Risk?**
What has the potential to cause harm?	**What is at risk? What do I wish to protect?**	**How can the hazard get to the receptor?**	**What measures will you take to reduce the risk? If it occurs who is responsible for what?**	**How likely is this contact?**	**What is the harm that can be caused?**	**What is the risk that still remains? The balance and probability and consequence.**
			Inspection and maintenance of roadways and areas of hardstanding.			
Vandalism.	Immediate area.	Land, air, water.	Security fences, controlled entrance to the site.	Low.	Release of substances to any environment.	Not significant.

6 Detailed Assessment

The environmental impact of the Facility has been evaluated using the H1 software tool as described in Part 2 of Technical Guidance Note EPR-H1, presented in Appendix A of this report. This assessment has been expanded by a more comprehensive Dispersion Modelling Assessment (refer to Appendix D of the application) and a Noise Assessment (refer to Appendix C of the application).

6.1 Emissions to Air

The assessment using the Environment Agency's H1 tool is presented in Appendix A of this report.

The detailed Dispersion Modelling Assessment is presented in Appendix D of the application. The assessment concludes that emissions from the Facility are not predicted to give rise to significant environmental effects on air quality, human health and odour.

The Human Health Risk Assessment, presented in Appendix D of the application, was developed to support the planning and EP applications. For the purposes of determining the EP application, it is requested that the EA only considers the assessment presented in section 3 of the report, as the COMEAP assessment presented in section 2 is not relevant to the determination of the EP application.

6.2 Habitats Assessment

There are a number of habitat sites present within a 10 km radius of the Facility's stack. The following habitat features presented in Table 6-1 have been considered within the air quality assessment:

Table 6-1: Sensitive Ecological Receptors

Site	Designation
European designated sites within 10 km	
Isle of Portland to Studland Cliffs	SAC
Chesil and The Fleet	SAC, SPA, Ramsar
UK designated sites within 2 km	
Isle of Portland	SSSI
Nicodemus Heights	SSSI
Chesil and The Fleet	SSSI
Local sites within 2 km	
Verne to Grove	SNCI
East Weare Camp	SNCI
Verne Yeates	LNR / SNCI
King Barrow Quarries	DWT Reserve
Tout Quarries	DWT Reserve
Portland Heights	SNCI
Grove Quarry	SNCI
Osprey Quay Bunds	SNCI
East Weare Rifle Range	SNCI

Site	Designation
Notes: DWT Reserve – Dorset Wildlife Trust Nature Reserve SNCI – Site of Nature Conservation Interest	

The dispersion modelling assessment concludes that the impact on these features can be described as follows:

1. For the internationally-and-nationally designated habitats, the Process Contributions (PCs) are less than 1% of the long-term and less than 10% of the short-term relevant Critical Loads and can be screened out as 'insignificant' with the exception of:
   a. Annual mean oxides of nitrogen impacts at Isle of Portland to Studland Cliffs (SAC and SSSI);
   b. Daily mean oxides of nitrogen impacts at Isle of Portland to Studland Cliffs (SAC and SSSI);
   c. Annual mean ammonia impacts at Isle of Portland to Studland Cliffs (SAC and SSSI) and Nicodemus Heights (SSSI);
   d. N deposition impacts at calcareous grasslands and broadleaved deciduous woodland at the Isle of Portland to Studland Cliffs (SAC and SSSI); and
   e. Acid deposition impacts at calcareous grasslands at the Isle of Portland to Studland Cliffs (SAC and SSSI) and acid grassland at Chesil and The Fleet (SAC and SSSI).

However, at all sites where the impact exceeds 1% of the long term or 10% of the short term Critical Level or Load the PEC is less than 70%. Further discussion of these impacts is provided in the shadow appropriate assessment which was developed in support of the planning application, refer to Appendix B.

6.3 Emissions to Water

6.3.1 Emissions to Surface Water

Surface water drainage will discharge north of the installation. There are no discharges of process effluent to water from the Facility. The only discharge to water will be of uncontaminated surface water run-off.

6.3.2 Emissions to Sewer

Where practicable, process effluents will be re-used within the Facility. Under normal operation, there will be no discharge of process effluents from the Facility. During certain maintenance events, such as a boiler being dropped, or in the event that there is excess process effluents being generated which cannot be re-used within the process, these will be discharged to sewer in accordance with a Trade Effluent consent. The Trade Effluent consent will be required for this discharge, prior to commencement of operations, and discussions are ongoing with Wessex Water.

Domestic effluents will be released to sewer.

6.3.3 Controlling fugitive emissions to water

All chemicals will be stored in an appropriate manner incorporating the use of bunding and other measures where appropriate to ensure appropriate containment. The potential for accidents, and associated environmental impacts, is therefore limited.

Adequate quantities of spillage absorbent materials will be made available on-site, at easily accessible location(s), where liquids are stored. A site drainage plan, including the locations of foul and surface water drains and interceptors will be made available on-site, where practicable.

Tanker off-loading of chemicals will take place within areas of concrete hardstanding with falls to a gully and/or a sump.

6.4 Noise

The impact of noise from the Facility is considered in the noise assessment contained in Appendix C in the Application.

6.5 Visual Impact

The visual impact of the Facility has not been considered in the EP application, since this is primarily a matter for the planning authorities.

6.6 Odour

The mitigation measures for odour are presented in Section 2.4.3 of the supporting information.

6.7 Photochemical Ozone Creation

Releases of CO, NO_2, SO_2 and VOCs (assumed to be benzene) contribute to the generation of excess tropospheric ozone, while releases of NO remove ozone from the atmosphere. The annual releases of these substances can be ascribed a photochemical ozone creation potential (POCP). Values for the POCP are stated in Annex (f) of Technical Guidance Note EPR-H1, for the pollutants included within the air quality assessment, as:

a. CO 2.7
b. NO_2 2.8
c. SO_2 4.8
d. Benzene 21.8

The total POCP for the Installation is calculated in the H1 Software Tool as 2,212 tonnes. This assessment is based on the assumption that all NO_x is released as NO_2.

6.8 Global Warming

The assessment of the contribution of the Facility to Global Warming is complex. On the one hand, the Facility releases carbon dioxide to the atmosphere by the combustion of incoming waste, as well as an auxiliary fuel (gasoil). On the other hand, the Facility generates electricity, which displaces other forms of electricity generation, which would release carbon dioxide from the combustion of fossil fuels.

In accordance with the Environment Agency requirements, a Greenhouse Gas Assessment which considers the direct and indirect emissions from the incineration of waste within the Installation and compares this with the emissions produced if the electricity were produced by conventional fossil fuel power station has been presented in Appendix D of the EP application pack.

6.9 Disposal of Waste

Methods for reducing the impact from waste disposal are considered in Section 2.9 of the supporting information.

7 Conclusions

As presented in this report, the Facility is considered to contain appropriate control measures and management systems to ensure that the Facility does not have any significant impacts upon the local environment.

Appendices

A H1 Assessment Tool

B Shadow appropriate assessment

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