ENVIRONMENTAL RISK ASSESSMENT

RDF Energy No 1 Ltd

Newport Energy from Waste Facility

Prepared by:
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1. INTRODUCTION

As part of an application for an environmental permit Operators must assess the risk to the environment and human health from the activities they seek to permit. This Environmental Risk Assessment has been undertaken in accordance with the online guidance for undertaking environmental risk assessments. Environmental risks relevant to the proposed activities are:

- Emissions to Air;
- Emissions to Water;
- Emissions to Land;
- Odour;
- Noise;
- Litter;
- Pests;
- Vandalism;
- Fire; and
- Incompatible Wastes.

For each of the above environmental criteria the approach to the assessment has followed the following four stage process:

- Identify the risks;
- Assess the risks (assuming those control measures proposed are in place);
- Choose appropriate further measures to control these (if required); and
- Present the assessment.

Environmental Risk Assessment						
Hazard	Receptor	Pathway	Risk Management Techniques	Probability of Exposure	Consequence	Overall Risk (following Mitigation)
Point Source \ Releases to Air	Atmosphere	Airborne	• The facility processes non-hazardous RDF waste. • The facility has one point source emission to air from the combustion plant through a 50m high stack (A1). • All emission concentrations from the instillation will be in line with those ELV's specified in Chapter IV of the Industrial Emissions Directive (IED). • An air quality assessment of emissions to atmosphere from the proposed development has been carried out and provided within *Annex C1 – Air Quality Assessment and HHRA.* • The report concludes that impacts on nearby sensitive receptors are not considered to be significant. • The plant will be operated with a single CEMS unit which will be linked into the controls system. In the unlikely event of CEMS failure, a full replacement CEMS will be available on site as soon as possible (12 hour service / call out contract) and the affected stream will be taken off site until CEMS can be installed. • All CEMS equipment and associated platforms and sampling ports installed on site will meet the requirements of the EA / SEPA Technical Guidance Note M2. All CEMS equipment shall be MCERTS approved.	Low: offsite receptor impacts	Air Pollution	**VERY LOW** due to the proposed processes on site

Emissions to Water	Groundwater / Geology / Surface Water	Waterborne	• There will be no direct process emissions to controlled water arising from the Installation. • All process effluent including boiler blowdown, wash waters, etc will be collected in the sedimentation basin and treated at the onsite Waste Water Treatment Plant (WWTP) prior to discharge to the docks. • All surface water runoff from low risk areas e.g roofs etc will be discharged via an attenuation tank to the docks. Surface water run-off from hardstanding areas including car parking will pass through oil interceptors prior to collection in the attenuation tank and discharge to eth docks. • An isolation valve is fitted prior to the pump emptying the attenuation tank to allow isolation if required. • Domestic effluent is treated at the onsite package treatment plant prior to discharge to the docks. • Any run-off from the temporary bale storage area when in use is diverted to the onsite WWTP for treatment prior to discharge to the dock. • Any run-off from the slag storage bunker is recirculated for cooling purposes onsite. • There is no internal drainage within the Fuel Reception Building. Any spillages or potentially contaminated firewater will be contained within the building. • In the unlikely event of a fire within the building, the firewater will be contained within the building and Fuel Storage Bunkers and pumped into a tanker for off site for disposal.	Low: all runoff is controlled on site, therefore the probability of exposure is low.	Contamination	VERY LOW due to the proposed management techniques and drainage arrangements

			• In the unlikely event of a fire in the external bale storage area, all drainage systems will be isolated and all firewater will be contained within the drainage system, attenuation tank, sedimentation basin and WWTP tanks prior to export offsite via tanker. • All hardstanding areas are kerbed to prevent surface water flow other than into the surface water drainage system. • All tanks onsite are designed and conform to relevant CIRIA and EA guidance. • The discharge to the docks can be isolated via a penstock valve preventing any discharge to the docks.			
Emissions to Land	Groundwater / Geology	Spills / Leaks	• There will be no emissions to land arising from the proposed facility. • Waste is stored either internally within the fuel processing building or temporarily externally within bales. • External storage of waste is within wrapped bales upon bunded impermeable hardstanding. Wrapping of the bales and short storage time significantly reduces the potential for leachate generation through rainwater ingress. • There is no external processing on site. • The majority of the site is situated on good quality concrete hardstanding. • Spill kits will be strategically located around site. • Minor spills to be cleaned up immediately, using spill kits. Resultant materials to be placed	Low: spills / leaks could potentially contaminate the ground / groundwater underneath the site.	Contamination	**VERY LOW** due to the proposed risk management techniques

			in container for off-site disposal to appropriate facility, if necessary. • Immediate action to be taken in event of any major spills. Spillage to be cleared immediately and placed in containers for offsite disposal. EA to be informed			
Noise	Local Residents	Airborne	• All potentially noisy plant will be acoustically enclosed and / or fitted with attenuation. • Appropriate preventative maintenance will be provided for the various elements of the Installation. This will ensure no deterioration of plant or equipment that would give rise to increases in noise. • The processing plant and associated equipment has been designed in accordance with best practice and to ensure that internal noise does not present an issue to the employees at the site under the Control of Noise at Work Regulations and to ensure that noise breakout does not lead to noise nuisance at the identified sensitive receptors. • A detailed Environmental Noise Assessment has been undertaken and recommended mitigation measures implemented. The noise assessment is provided in Annex C2 of the main application. • The facility will not give rise to reasonable cause for annoyance. In the unlikely event that complaints are received measures described in the integrated management system will be put in place.	Medium: due to the nature of the activities, noise emissions from the plant are inevitable and could cause offsite receptor impacts	Nuisance	LOW due to the proposed risk management techniques
Odour	Local Residents	Airborne	• The fundamental design of the facility has a hierarchy of odour control and abatement	Moderate: incoming wastes have the	Nuisance	LOW due to the proposed risk

			measures to ensure that the potential for odour impacts are eliminated. • The site has stringent waste acceptance procedures which will ensure that no excessively odorous waste will be accepted onto site. Any potentially excessively odorous waste loads are immediately rejected upon arrival in accordance with the sites waste rejection procedures. Should any odorous waste be mistakenly accepted, it will be transferred to the quarantine area and removed at the earliest opportunity. • All wastes are unloaded within the Fuel Reception Building which is equipped with fast acting roller shutter doors, unloading will only take place when the shutter doors are closed. All processing of waste is internal. • External storage of waste is limited to wrapped bales for limited period of 10 days prior to processing. This is only undertaken temporarily and on a periodic basis to allow for operation over long weekends where deliveries may be interrupted. The contained nature of the bales via wrapping ensures limited potential for odour escape during storage. Any damaged bales are transferred internally for storage and imminent processing. • The combustion process itself has no significant potential for odours as the combustion effectively destroys any odorous compounds. • Odour shall be monitored daily at points around the site boundary and observations	potential to be odorous by their nature		management techniques

			shall be noted in the site diary and/or on a daily monitoring document. • The Fuel Building will be kept at slight negative pressure to reduce the potential for odour emissions. The an air extraction system is routed to the combustion plant providing primary combustion air. A back up extraction system incorporating carbon filtration is installed in the event that there are any plant shutdowns. • Although it is considered that there is very little potential for odour complaints arising from site activities, any complaints will be immediately investigated and appropriate measures implemented if necessary. • The site has a dedicated Odour Management Plan.			
Visible Plumes	Local Residents	Airborne	• The flue gases are significantly elevated and significantly above the dew point that would cause a visible plume.	Negligible	Nuisance	**NEGLIGIBLE**
Dust	Local Residents	Airborne	• Pre-processing of wastes onsite is limited to debaling and shredding where required. • All processing takes place internally within the Fuel Reception Building with RDF shredded directly into the Fuel Storage Bunker. • All delivery and collection vehicles are covered. • Waste types accepted onsite (RDF) are not inherently dusty. • Bottom ash and boiler ash are quenched and stored within a common bunker prior to export offsite. APCr is collected for storage within an enclosed silo.	Low: the occurrence of dust onsite is unlikely due to the nature of wastes, lack of pre-processing size reduction and containment of ashes.	Air pollution / Nuisance	**VERY LOW** due to the nature of the process and proposed management techniques

Litter	Local Residents	Airborne	• Waste is stored internally or temporarily externally within wrapped bales. • The wrapped nature of external storage ensures minimal risk of litter. Bales within the storage area are inspected during the daily site walkover. Any damaged bales are immediately removed to the internal storage area and processed. • All processing of waste is internal within the Fuel Processing Building. • All incoming and exporting waste vehicles will be covered. • The site access and site services shall be swept as necessary. • The site shall be inspected daily by the site manager and any litter or accumulated debris shall be dealt with immediately.	Low: the occurrence of litter on site is unlikely	Nuisance	LOW due to the proposed risk management techniques
Pests	Local Residents	Airborne & migration	• Pests are not likely to become a problem on site. • Monitoring for evidence of pests to be included during the daily site perimeter inspection. • However, if a problem does develop, reasonable measures will be taken to use commercially available products and services to control pests. • If a particular waste is determined to be the cause of a problem it shall be removed from site at the earliest available opportunity and consideration given to mitigation measures that may be implemented before any more waste from that source is accepted on site.	Low: the occurrence of pests on site is highly unlikely.	Nuisance	VERY LOW due to the proposed risk management techniques

Vandalism	Operator	The site could be subject to intentional vandalism and damage by intruders / trespassers who could cause damage or harm to the site or cause fires.	• The site is enclosed by a perimeter fence which will be inspected periodically to ensure that the site security has not been compromised; • CCTV monitoring of the external and internal areas of the Installation is in place; • External on-line monitoring and administration of the waste-to-energy process from a remote location; • All personnel and vehicles entering the site are strictly controlled and managed; • No vehicles or personnel will be allowed access to the facility without prior authorisation.	Low: the occurrence of vandalism taking place on site is highly unlikely.	Nuisance, Damage or Fire	VERY LOW due to the proposed risk management techniques
Fire on site	Operator / Residential Properties	Windborne	• Arson by intruders is controlled via CCTV monitoring and site being manned 24/7. • The site is well lit and secured by a perimeter fence. • The Fuel Reception Building is equipped with a fire detection and suppression system which will immediately identify any hotspots within the storage bunkers. • All storage duration times are well within the NRW's Fire Prevention Plan Guidance. • RDF onsite has a low risk of combustion due to their rapid turnaround time onsite. • The site has a regular inspection and maintenance programme which identifies any electrical or mechanical machinery faults which could result in a machinery fire. • Machinery is regularly cleaned to remove any dust, etc. • All relevant equipment on site is equipped with dedicated fire suppression.	Low: the occurrence of a fire taking place on site is highly unlikely	Fire	VERY LOW due to the proposed risk management techniques and the type of waste stored on site.

			• The site has a dedicated firewater tank to provide water for suppression. • A number of fire extinguishers are placed at strategic locations around the plant. • In addition the site is located close to the Docks ensuring a continuous supply of water from the Fire Service for active fire fighting. • Staff and visitors are only permitted to smoke within the designated smoking area. • The site is operated in accordance with a dedicated Fire Prevention Plan.			
Incompatible Wastes	Operator / Residential Properties	If incorrect waste is accepted on site it could result in adverse emissions	The following methods will be implemented to ensure that incompatible wastes do not compromise the safe operation of the plant: • All waste accepted onto site have been subject to 'pre-acceptance' in accordance to an established procedure; • All waste is accepted in accordance with an established procedure; • Any non-conforming waste will be removed prior to acceptance in accordance with an established procedure. Records of incidents involving incompatible wastes will be kept on site together with a summary of the remedial action taken.	Low: off site receptor impacts	Nuisance / Adverse Emissions	VERY LOW due to the proposed risk management techniques