ENVIRONMENTAL RISK ASSESSMENT

Grid Powr (UK) Limited
Energy Production Facility

Prepared by:
Sol Environment Ltd

Date:
June 2023

Project Issue Number:
SOL_22_PO96_GP

Sol Environment Ltd | Malvern | Bristol | Edinburgh
enquiries@sol-environment.co.uk | t. +44(0)1684 572727 (Switchboard) | +44(0)117 9372811 (Bristol)

VERSION CONTROL RECORD			
Contract/Proposal Number:	SOL_22_PO96_GP		
Authors Name:	Sophie Rainey		
Signature:			
Issue	**Description of Status**	**Date**	**Reviewer Initials**
1	First Submission to the Environment Agency	1st June 2023	EH

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 to support a Bespoke Installation permit application in accordance with the Environment Agency Guidance for undertaking environmental risk assessments.

Environmental risks relevant to the site activities are:

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

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 will only process non-hazardous refuse derived fuel. • The facility will consist of a single stack comprising of two flues (A1 and A2), the chimney shall be designed in accordance with relevant standards. • All emission concentrations from the combustion plant will be in line with those ELV's specified in Chapter IV of the Industrial Emissions Directive (IED) and the Waste Incineration BREF. • An air quality assessment of emissions to atmosphere from the proposed development has been carried out and provided within *Annex D – Air Quality Assessment and HHRA*. • The air quality impact assessment considered the air impact to all identified residential, sensitive habitat and ecological receptors. • It is the conclusion of the modelling that predicted maximum off-site concentrations are assessed as 'not significant' or well below the relevant air quality standards for all pollutants considered. • The habitat assessment considered the impact of airborne concentrations of the oxides of nitrogen, sulphur dioxide, ammonia and hydrogen fluoride. Predicted concentrations were compared to relevant critical levels. In	Low: Due to distance of closest receptors	Air Pollution	**VERY LOW** due to the mitigation in place and the distance of the closest receptor

addition, the impact of nutrient nitrogen deposition and acidification were assessed with deposition fluxes compared to the most stringent critical loads for the habitats present at each designated site. Where the impacts could not be screened out (i.e. long term exposure is greater than 1% or short term exposure is greater than 10% of the relevant critical levels/loads) an interpretation of the likelihood of effects on the habitat sites has been provided by the project ecologist.

- The plant will be operated with a single CEMS unit per stream which will be linked into the controls system. In the unlikely event of CEMS failure, a full replacement back-up CEMS will be available on site.
- All CEMS equipment and associated platforms and sampling ports installed on site will meet the requirements of BS EN 15259 Air quality – Measurement of Stationary Source Emissions and Environment Agency Technical Guidance Note M2. All CEMS equipment shall be MCERTS approved.
- Flue gas cleaning and pollution control consists of Selective Non-Catalytic Reduction (SNCR) through ammonia hydroxide injection within the combustion chambers, Selective Catalytic Reduction (SCR) through ammonia hydroxide injection into the flue gas after the bag filtration unit, sodium bicarbonate injection for acid gas neutralisation and activated carbon powder injection for absorption and removal of heavy metals, dioxins, VOCs and other harmful substances.

			• Bag filters will be used for reducing dust particulate quantity in flue gases • The design of the plant will ensure that the emission limits are in line with those set out in the Environment Permit.			
Emissions to Water	Groundwater / Geology / Surface Water	Waterborne	• There will be no process emissions to controlled waters. • There will be no external activities on site. All processes are internal. • Uncontaminated clean surface water runoff captured from roof drainage and external roadways / car parking areas will be discharged to the existing surface water drainage system (W1). • Any effluent arising from the process plant will be collected in an effluent collection tank and discharged via sewer (S1). There will be a maximum of 4m3/hr of effluent discharged to sewer which will mainly consist of treated effluent from the water treatment plant. • All domestic foul effluent arisings will also be discharged via sewer. • All emissions to sewer will be monitored in line with the sites effluent discharge consent once granted. • In the event of a significant site fire, the facility has been designed to fully contain any firewater run-off. In the event of a fire within the bunkers, any water from the suppression system will be contained within the bunkers. In the event of a fire within the waste offloading area, the slab and floor areas are designed such that all firewater will be contained within the	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

			building. The building will have a bunding system to stop any potentially contaminated firewater escaping which will be finalised during detailed design. The firewater collected will be tankered off site for disposal.			
Emissions to Land	Groundwater / Geology	Spills / Leaks	• There will be no emissions to land arising from the proposed facility. • There will be no external activities on site. All processes are internal. • Spill kits will be strategically located around site. • Minor spills will be cleaned up immediately, using spill kits. Resultant materials to be placed 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	Low: spills / leaks could potentially contaminate the ground / groundwater underneath the site.	Contamination	VERY LOW due to the proposed risk management techniques
Noise	Local Residents	Airborne	• All potentially noisy plant will be acoustically enclosed and / or fitted with attenuation. • Vehicle deliveries will only take place during daytime. • 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	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

			Noise at Work Regulations and to ensure that noise breakout does not lead to noise nuisance at the identified sensitive receptors. • 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. • A noise impact assessment has been carried out to assess the noise impacts from the proposed development and is included within *Annex E – Noise Impact Assessment*. • The report concludes that the total, aggregate environmental noise impact arising from the proposed operation of the plant, in full compliance with the plant noise specification as presented within the report, results in a "low" noise impact at the worst affected noise sensitive receptors, all as assessed in accordance with British Standard BS4142: 2014+A1: 2019. The assessment also indicates that the requirements of Planning Condition 12 of the 2018 Planning Consent (Planning Application number: 2018/1437) are capable of being met.			
Odour	Local Residents	Airborne	• Due to the design of the building structure and the fully enclosed processing activities, there is very little potential for offsite odour emissions and impacts to arise from the site. • Entry to the waste reception area is via electrically controlled fast acting roller shutter doors. Vehicles will enter backwards and discharge the waste onto the floor of the waste	Medium: the occurrence of odour emissions from the site is possible	Nuisance	LOW due to the proposed risk management techniques

			reception hall. The doors are complete with air curtains to prevent any odorous emissions escaping during the unloading of waste. Once unloaded the vehicles will exit the building and the roller shutter doors are closed. • The roller shutter doors will be closed at all times apart from during the delivery of waste. It will take HGVs less than 5 minutes to unload the waste. • To avoid any odour emissions, the building will be kept at slight negative pressure. An air extraction system will be in place resulting in odorous air within the building being thermally destroyed by the combustion system. • No malodorous RDF will be accepted onto site and therefore the potential for offsite odour impacts is considered negligible. • An Odour Management Plan has been produced which will form part of the sites Environmental Management System which is provided in *Annex J – Odour Management Plan*.			
Dust	Local Residents	Airborne	• Vehicle speeds will not exceed 5mph on site which is a recognised method of controlling dust. • All plant will be regularly maintained, inspected and kept clean to avoid a build-up of material, which may lead to dust emissions. • Vehicles delivering to the site will be covered. • Site drainage, containment systems and associated infrastructure will be regularly cleared and maintained as required to ensure they are working correctly.	Low: the occurrence of dust emissions migrating offsite is low	Nuisance	**VERY LOW** due to the proposed risk management techniques

			• The facility will not give rise to reasonable cause for annoyance. In the unlikely event of any complaints, these will be dealt with in accordance with the sites complaints procedures. • No inherently dusty material is accepted onto site, therefore the potential for dust emissions is very low.			
Litter	Local Residents	Airborne	• There are no external activities on site. All RDF is delivered into a building and delivered to the combustion plant via enclosed conveyor. Therefore, it is unlikely external litter will be generated for the new activities on site. • 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. • The site will have robust housekeeping measures in place.	Low: the occurrence of litter on site is highly unlikely therefore the probability of exposure is very low.	Nuisance	VERY LOW due to the proposed risk management techniques
Pests	Local Residents	Airborne and migration	• Pests are not likely to become a problem on site. • 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	Low: the occurrence of pests on site is highly unlikely.	Nuisance	VERY LOW due to the proposed risk management techniques

			that may be implemented before any more waste from that source is accepted on site. • The short storage times of waste reduces the risk of pests.			
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 will have CCTV monitoring and is manned 24/7. • The site will be well lit and secured by a perimeter fence. • Fencing is maintained and repaired to ensure its continued integrity. If damage is sustained, repair will be made within the same working day. If this is not possible, suitable measures will be taken to prevent unauthorised access to the site and permanent repairs will be affected as soon as is practicable. • All visitors to the site are required to register in the visitor's book and sign out again on exit, thereby minimising the risk of unauthorised visitors on the site.	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 will be controlled via CCTV monitoring and site being manned 24/7. • The site is well lit and secured by a perimeter fence. • The Fuel Reception Hall is equipped with a fire detection and suppression system which will immediately identify any hotspots within the storage piles. • All proposed storage duration times are well within the EA's Fire Prevention Plan Guidance. • The site will have a regular inspection and maintenance programme which will identify any electrical or mechanical machinery faults which could result in a machinery fire.	Low: the occurrence of a fire taking place on site is highly unlikely	Fire	VERY LOW due to the proposed risk management techniques

			• Machinery will be regularly cleaned to remove any dust, etc. • All relevant equipment on site will be equipped with dedicated fire suppression. • A number of fire extinguishers will be placed at strategic locations around the plant. • The potential for sparks will be regularly monitored by site staff. • The risk of damaged or exposed electrical cables will be controlled via the regular inspection and maintenance programme. • Staff and visitors will only be permitted to smoke within the designated smoking area. • There will be no smoking permitted within the operational area of the site. • The site has a detailed Fire Prevention Plan.			
Incompatible Feedstock	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 feedstocks do not compromise the safe operation of the plant: • All RDF will be subjected to 'pre-acceptance' in accordance to established waste acceptance procedures; • All incoming RDF will be accepted in accordance with established waste acceptance procedures; • Any non conforming RDF will be removed prior to acceptance in accordance with established waste acceptance procedures. Records of incidents involving incompatible waste 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