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Environmental Management System Summary

Scottow Enterprise Park

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Author	Jessica Easterbrook
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Name Jessica Easterbrook
Job title Senior Environmental Consultant



Name Sophie Rainey
Job title Permitting Team Leader

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Registered office: 10 The Lees, Malvern, Worcestershire, WR14 3HT

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1. INTRODUCTION

This document has been prepared by Sol Environment Ltd on behalf of Standard Gas SG No.1 Limited (referred to as 'Standard Gas' hereafter) to provide an Environmental Management System (EMS) Summary in support of a Bespoke Installation Permit application for the proposed operation of a synthesis gas fired CHP facility that incorporates Advanced Thermal Treatment (ATT, pyrolysis) which thermochemically produces cracked and cleaned syngas from non hazardous solid wastes, principally Solid Recovered Fuels(SRF) and Refuse derived fuels (RDF) to operate a series of gas fired CHP gas engines to generate power and provide heat to the wider Scottow Enterprise Park.

The Site is located at Hangar 2, Scottow Enterprise Park, Lamas Road, Badersfield, Scottow, Norfolk, NR10 5FB.

The Installation has been designed to process approximately 50,000 tonnes of pre-processed non-hazardous waste per annum (energy mass balance of the plant assumes an average of 6 tonnes per hour with a typical GCV of 11 – 15MJ/kg) to generate approximately 5MWe of renewable electricity and approximately 2.5MWth of heat.

The key infrastructure and design of the site will comprise the following:

- Main processing building;
- External baled storage area;
- Feed system with de-baler and screening equipment;
- Pyrolysis Island;
- Syngas cleaning and conditioning system;
- Pyrolysis exhaust stack (A1);
- Emergency flare (A3);
- Char collection and cooling system;
- 2 x CHP Engines with associated exhaust stack (A2); and
- Emergency diesel generator and associated auxiliary fuel storage.

The Applicant is making an application for a Bespoke Part A(1) Environmental Permit for the proposed operation of a pyrolysis plant.

The Standard Gas pyrolysis technology will produce a clean 'End of Waste' synthesis gas and therefore meets the definition of an Installation as defined by Section 1.2 'Gasification, liquefaction and refining activities' paragraph A(1)(f)(iv) namely:

'Activities involving the pyrolysis, carbonisation, distillation, partial oxidation or other heat treatment of other carbonaceous materials.'

On the basis that all has combusted by the process meets the 'End of Waste' criteria, the CHP engines will be regulated as Medium Combustion Plant (MCP) and Specified Generators (SG) and operated in accordance with the Environmental Permitting (England and Wales) Regulations 2018 (As Amended).

The EMS will set out how the environment will be managed on site in accordance with the environmental permit and the Environment Agency Guidance 'Develop a management system: environmental permits' (available at <https://www.gov.uk/guidance/develop-a-management-system-environmental-permits>) ('EA Guidance'), and Waste Incineration BREF BAT 1. The EMS explains what happens at Standard Gas to ensure the following:

- The environment is protected from adverse impacts from the activities;
- The organisation is protected from environmental conditions such as floods or droughts;
- The Permit and environmental legislation are complied with;
- The sustainability of the operations is addressed; and
- Environmental information and performance are communicated to relevant interested parties.

The EMS will be developed and maintained by Standard Gas (the operator of the Environmental Permit).

2. LAYOUT OF THE EMS

The EMS will be laid out in a similar fashion to ISO 14001:2015, focusing on a 'Plan-Do-Check-Act' cycle of management and control. Each section is briefly summarised in this document with reference to the requirements of the EA Guidance for clarity. The section headings are as follows:

- Risks and opportunities;
- Management of the EMS;
- Pollution prevention planning;
- Competence and awareness;
- Communication;
- Control of documents and data;
- Operational planning and control;
- Emergency preparedness and response;
- Monitoring and measurement;
- Internal audit;
- Management review; and
- Improvement.

3. CONTEXT OF THE EMS

The level of detail and complexity of the EMS will be determined using a life cycle approach based on compliance obligations, interested parties, internal and external issues and other issues and requirements such as the outcome of audits and management reviews.

Risks and opportunities associated with the environmental discharge will be identified and recorded in the initial stages of the EMS design to prioritise significant environmental risks, consider the benefit of opportunities, and have a thorough understanding of the scope of environmental protection required.

4. MANAGEMENT OF THE EMS

Managers of Standard Gas' activities take their responsibility for environmental compliance and sustainability very seriously. To make the structure of responsibilities clear, the EMS will include an organisation chart.

Standard Gas are keen to identify opportunities to prevent or mitigate adverse environmental impacts and enhance beneficial environmental impacts, particularly those with strategic implications, to remain effective at environmental protection. Environmental management is therefore integrated into the project development plans and decision making, aligning it with other business priorities.

5. POLLUTION PREVENTION PLANNING

The following aspects of the business have been included in the application and Environmental Risk Assessment, sourced from site plans and specialist reports:

- Authorised activities;
- Details of site drainage arrangements;
- Locations for mains water, gas, and electricity supplies;
- Buildings, relevant plant and equipment and security fencing;
- Storage facilities for oil, fuel tanks, chemical stores, and waste materials;
- Spill kit locations and drain protectors;
- Emergency service routes in and out of the site;
- Pollution control inspection and monitoring points;
- Surface water and effluent discharge points; and
- Vulnerable locations.

6. COMPETENCE AND AWARENESS

A training matrix will be in place to ensure that each member of staff that can affect the environmental performance of the installation is competent based on their training, education, and experience as appropriate. Records of training sessions and qualifications will be maintained as part of the EMS.

The training matrix details who is responsible for various environmental procedures and which staff roles are relevant to the conditions of the Environmental permit.

A procedure will be established for checking the training and qualifications of external providers in advance of carrying out work on site. They are provided with the information necessary to work in accordance with Standard Gas' environmental permit.

7. COMMUNICATION

Communication with relevant interested parties will be determined based on the information that needs to be communicated and the associated circumstances. Different types of communication will be considered to promote understanding of the EMS and engagement with interested parties at all levels.

Relevant staff will have access to the EMS and are required to understand their duties and responsibilities as part of induction and ongoing training.

A process will be established for receiving communications from and responding to, internal and external communications, considering the needs and expectations of the interested parties.

Complaints will be managed and recorded using procedures that lay out how complainants should be communicated with and how their complaint must be investigated.

8. RECORDS AND CONTROL OF DOCUMENTS AND DATA

Documented information for the EMS will be developed, maintained, and controlled to ensure effective operations. Records required by the environmental permit will be managed according to processes described in the EMS, including a list of their retention times. They include the following documents:

- Environmental Permit;
- Compliance Obligations;
- Duty of Care transfer notes for non-hazardous waste;
- Environmental Risk Assessment;
- Operating Procedures;
- Staff Competence and Training Matrix;
- Site and Equipment Maintenance Record;
- Emissions Monitoring Data;
- Records of compliance checks and audits, findings of investigations and actions taken;
- Records of complaints made, findings of investigations and actions taken;
- Audit Reports including findings and actions taken; and
- Management reviews and changes made to the EMS.

Data is protected through software and online security controls.

9. OPERATION PLANNING AND CONTROL

The operation of the transfer, storage and pyrolysis of waste will be conducted in a controlled way by identifying what types and levels of controls are needed where and for what purpose. The relevant procedures list the steps taken to prevent or minimise risks to the environment from the process. The waste storage plan will include appropriate types and levels of control. Relevant staff and other interested parties will have access to all the documents they need and understand that to operate effectively the processes making up the EMS must be carried out as planned.

The operational controls consist of procedures, work instructions, physical controls and use of competent personnel. Types of control are based on the skills and experience of the people carrying out the operation, and its complexity and environmental significance. Steps to determine controls include choice of method and operating criteria (e.g., measurements, features on the plant), writing down how processes should be planned, carried out and controlled, designing documents such as records and reports and applying technological options such as automated systems and software.

The controls will be monitored to check they continue to be effective, and action is taken if there are changes or improvements to be made.

Maintenance of all tanks, bunds, connections, plant, etc. will be carried out according to the manufacturer's or supplier's recommendations using the appropriate instructions, guidelines, and manuals.

Contingency plans will be in place for a robust response to minimise the impact on the environment of any breakdowns, enforced shutdowns and any other changes in normal operations, for example due to flooding or other extreme weather based on climate change knowledge and trends.

10. EMERGENCY PREPAREDNESS AND RESPONSE

To ensure a comprehensive response to any emergency, consideration will be given to the initial environmental impact and the secondary environmental impact that could result, e.g., fighting a fire can lead to water and air pollution.

The scale of accident management covers incidents from spillages of chemicals or failure of emission abatement equipment to large-scale events such as floods that could endanger humans and the environment to a broader extent.

The Accident Management Plan details incidents or events that could result in pollution, including the likelihood of an accident occurring and the potential consequences, measures to avoid the accident happening in the first place, and corrective actions in the event an accident does take place. The following potential accidents have been considered as a minimum:

- Breach of Environmental permit;
- Equipment breakdowns;
- Enforced shutdown of the treatment plant;
- Fires;
- Vandalism;
- Flooding; and
- Extreme weather based on climate change knowledge and trends such as heat waves, hot days, and storms.

Accidents will be recorded, including any investigation and response.

To assist staff in the event of an accident, a record form, and a list of emergency contacts and how to reach them will be included in the Plan, together with an up-to-date list of substances stored at the site with the type of storage facility used. The Accident Management Plan will be regularly reviewed.

11. MONITORING AND MEASUREMENT

A Monitoring and Measurement Plan will be in place to analyse and evaluate the environmental performance of the plant. The environmental risks, compliance obligations and operational controls are considered when determining how monitoring and measurement will be carried out and how it will be recorded and communicated. Results are used to identify nonconformances (e.g., triggers that indicate a permit limit may be breached), look at performance trends and find opportunities for improvement.

12. INTERNAL AUDIT

A process will be established to evaluate the extent to which the businesses compliance obligations are fulfilled, by conducting regular internal audits and providing information to management on the performance of the EMS.

The internal audit programme will be based on the environmental risks and opportunities, the results of previous audits, monitoring and measurement results, and management reviews. Audit findings are captured in a report including action lists and action close-outs where appropriate.

13. MANAGEMENT REVIEW

Management reviews that include the environment on the agenda will be held at least annually to check compliance with the Environmental Permit and EMS. There will be an annual environmental management review with a fixed agenda to review the year's environmental compliance, suitability of the procedures and the adequacy and effectiveness of the EMS in achieving environmental improvements. This enables decisions on priorities and resources for the EMS to be balanced with other business priorities and resource needs.

The EMS will be reviewed and updated under the following circumstances:

- Changes made to the site, operations or equipment that affect permitted activities;
- After any accident, complaint, or breach of permit; and
- After identification of a new environmental problem or issue with new control measures.

A record of changes to the EMS will be kept, including the following:

- New abatement or process equipment; and
- Implementation of significantly new or different control measures.

14. IMPROVEMENT

Improvement opportunities will be identified from the following EMS processes:

- Communication with interested parties including staff, customers, and the authorities;
- Monitoring and measurement;
- Analysis of data and information relating to environmental performance;
- Evaluation of compliance obligations;
- EMS audits; and
- Management reviews.

The detection of non-conformities such as potential Permit breaches or procedures not being followed is critical to improvement.

In the event of a non-conformity, an investigation will be carried out to determine where the EMS needs improving, and action will be taken to make the appropriate changes and eliminate the cause where possible so the incident will not re-occur. Changes are communicated to relevant staff.

Improvement findings from all sources will be fed back into the Plan-Do-Check-Act cycle for continual improvement.