



# Environmental Management System Summary

Plastics to Oil Facility

December 2025

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## Plastics to Oil Facility

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## 1. INTRODUCTION

This document has been prepared by Sol Environment Ltd on behalf of Endolys Ltd (referred to as “Endolys” hereafter) to provide an Environmental Management System (EMS) Summary in support of a Bespoke Installation Permit application for the pyrolysis of waste plastics into pyrolysis oil..

The site is located at Endolys Ltd, Yarm Road, Darlington, DL1 4DE (National Grid Reference: NZ 32060 13554).

The proposed development is for a waste plastics thermal treatment pyrolysis facility which will import and process circa 120,000 tonnes of waste plastic film per annum. The proposed facility will process the waste plastic film through a pre-treatment process followed by pyrolysis to produce pyrolysis oil (Pyoil) which is exported for further refinement.

Non-condensable synthetic gas (syngas) produced by the process will be either combusted within the process or utilised within an onsite boiler for steam generation. By virtue of the fact that the syngas is produced from the thermal treatment of waste plastic, the combustion of the syngas meets the definition of a co-incineration activity. At this stage, End of Waste status is not being sought for the syngas, though this may be undertaken in the future.

The project will be undertaken in two phases; 6x pyrolysis units will be installed in Phase 1, with a further 6x pyrolysis units in Phase 2. By project completion there will be a total of 12x pyrolysis units, each with a capacity of 1.3 tonnes per hour, operating at approximately 33 tonnes per day, 10,000 tonnes per annum.

Endolys’ 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 <https://www.gov.uk/guidance/develop-a-management-system-environmental-permits>). The EMS explains what happens at the proposed facility 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 complete EMS will be developed and maintained by Endolys Limited (the operator of the Environmental Permit).

## 2. LAYOUT OF THE EMS

The EMS will be laid out in a similar fashion to ISO 14001, 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;
- 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 performance of Endolys' pyrolysis facility will be identified and recorded in the initial stages of the EMS design in order 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 Endolys Ltd take their responsibility for environmental compliance and sustainability very seriously. To ensure commitment from all levels and functions of the business, the EMS will include an organisation chart, details on the organisational arrangements, an environmental policy and associated strategic plans.

Endolys Ltd 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 producing pyrolysis oil from waste plastics. Environmental management is therefore integrated into business processes, strategic direction and decision making, aligning it with other business priorities.

## 5. POLLUTION PREVENTION PLANNING

The following aspects of the business have been included in the environmental risk assessment, sourced from site plans and specialist reports:

- Authorised activities;
- Details of site drainage for surface water, foul and combined;
- Locations for mains water, gas and electricity supplies, where applicable;
- Buildings, relevant plant and equipment and security fencing;
- Storage facilities for waste plastic materials;
- Spill kit locations and drain protectors;
- Emergency service routes in and out of the site;
- Pollution control inspection and monitoring points;
- Surface / foul water 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 pyrolysis facility 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 the Technically Competent Manager (TCM) is for the site, 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 the Endolys 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 in order to promote understanding of the EMS and engagement with interested parties at all levels.

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, taking into account 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.

To aid public awareness of the nature of the site, a noticeboard will be displayed by the entrance that provides the essential site details and Environmental Permit authorisation with the Environment Agency's emergency number.

## 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 plastic waste and consignment notes
- Environmental Risk Assessment;
- Human Health Risk Assessment;
- Global Warming Assessment;
- EMS Management Plans:
  - Accident Management Plan;
  - Fire Prevention Plan;
  - Odour Management Plan.
- Operating Procedures;
- Staff Competence and Training Matrix;
- Site and Equipment Maintenance Record;
- 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 management system.

Data is protected through software and online security controls.

In addition to the above, a Site Condition Report will be maintained that records the condition of land and groundwater as applicable throughout the life of the Environmental Permit, including the:

- Incidents that took place before operations began;
- Protective measures undertaken to protect land and groundwater as applicable since operations began; and
- Measures to avoid pollution risk from the activities on site during operations.

## 9. OPERATIONAL PLANNING AND CONTROL

The site activities and processes 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 minimize risks to the environment from each activity and process, with a focus on understanding the nature of the waste involved in each one. 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 the use of competent personnel. The type of control used is 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. Requirements of the Management Plans produced for odour, and accidents are captured in procedures and other measures taken on site to prevent pollution.

The waste storage plan will include the following types and levels of control as required:

- The waste storage plan and associated procedures include the following information for each area:
  - Storage time and volumes for each type of waste (worst-case scenario);
  - Control of storage limits, considering permitted volumes and odour emissions
  - Height of storage piles for each waste type, where applicable;
  - Waste segregation – infrastructure and processes; and
  - Waste acceptance procedures for all waste types, where applicable.

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

Maintenance of site infrastructure and machinery will be carried out according to the manufacturers 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 small, localised fires 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 shutdowns;
- Fires;
- Vandalism;
- Flooding;
- Extreme weather based on climate change knowledge and trends such as heat waves, hot days and storms; and
- Other than normal operational conditions.

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, and an up-to-date list of materials and substances stored. The Accident Management Plan will be reviewed annually or after any incident.

The emergency services will be aware of the activities on site and the clean-up cost will be covered by insurance. Staff will have access to site information remotely in the event they cannot get on site safely.

A Fire Prevention Plan describing how fire is prevented, or will be managed if it occurs on site, will be in place having been agreed by the Environment Agency.

## 11. MONITORING AND MEASUREMENT

A monitoring and measurement plan will be in place to analyse and evaluate the environmental performance of the business. The environmental risks, compliance obligations and operational controls are taken into account 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 organisation's 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 regularly throughout the year to check compliance with the Environmental Permit, procedures and management systems. 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.

Inputs to the management review include:

- Audit results;
- Fulfilment of compliance obligations;
- Data showing environmental performance trends;
- Status of corrective actions;
- Follow-up actions from previous management reviews;
- Responses to changing circumstances;
- Adequacy of resources; and
- Recommendations for improvement.

Outputs of the management review include:

- EMS suitability, adequacy and effectiveness;
- Opportunities for continual improvement;
- Need for changes to physical, human and financial resources;
- Actions related to changes;
- Actions related to integrating the EMS into business processes; and
- Implications for the strategic direction of the company.

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 significant 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:

- Changes to the maximum amount of waste stored on site;
- 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 for improvement.

In the event of 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.