

# Odour Management Plan

## Introduction

The TEGCO Immingham Ltd Installation at Netherlands Way, Stallingborough, Grimsby, DN41 8DF is an Energy from Waste (EfW) process. The installation is designed to consume 320,000 Te/yr of Refuse Derived Fuel (RDF) based on 10 MJ/kg (LHV), producing: -

- 12 MW electrical export,
- 51 MW thermal export (60 Te/hr) as steam (no condensate return).

The installation is a Combined Heat & Power (CHP) plant sized and is designed to replace the steam and electricity currently generated by an existing CHP plant on an adjacent industrial plant. The existing CHP plant is reaching the end of its operational life and will be decommissioned when the installation is operational.

The need to continue to take waste in the event that steam and/or electricity cannot be exported (e.g. customer is shutdown), the installation is designed such that all steam generated at normal waste feed can pass through the turbine and condenser resulting in 24 MW electrical export.

A proportion of the RDF is sourced from local waste management companies and transported to the installation by road. The remaining is sourced from further afield and transported by rail to 1 of 2 local railheads and the final transfer from the railhead to the installation is by road.

The installation will operate continuously (24 hr/day & 7 day/week) for >8,000 hr/yr.

The installation consists of 2 off 20Te/hr incineration lines (combustor, boiler & feed-water system) and a single turbine and air cooled condenser.

The installation is designed not to generate any waste water from the process during normal operation.

The installation is designed to be fully compliant with the 2019 European BREF for Waste Incineration (JRC 118637) and the associated BAT Conclusions published in the Official Journal of the European Union on 3<sup>rd</sup> December 2019.

## Potential receptors

The nearest residential human receptors are listed in the Table below: -

Identifier	Receptor	Type	Easting	Northing
R1	Council Offices	Commercial	520579	414992
R2	Queens Road	Residential	520034	414789
R3	Mauxhall Farm	Residential	519197	414212
R4	Immingham	Residential	519219	414216
R5	Recreation Ground	Leisure	519293	414601
R6	Kings Road	Residential	519385	414945
R7	Grassmere	Residential	521286	413107

A map showing these locations relative to the installation is included in Appendix 1

The nearest relevant environmental receptors are listed in the Table below: -

Identifier(s)	Receptor	Primary Habitat	Approx. Location
H1_1 – H1_12	Humber Estuary SAC	Atlantic Salt Marsh	1.1 km NE
H1_1 – H1_12	Humber Estuary SPA/RAMSAR	Pioneer, low-mid, upper mid saltmarshes	1.1 km NE
H1_1 – H1_12	Humber Estuary SSSI	Intertidal mudflats	1.1 km NE
H2	North Moss Lane Meadow SNCI	Assumed low and medium altitude hat meadows	1.3 km SSE
H3	Immingham Dock SNCI	Assumed rich fen	0.8 km N
H4	Laporte Road Brownfield Site LWS	Assumed inland dune pioneer grasslands.	0.8km NE
Humber Estuary (H1) is very large receptor and 12 locations along the boundary closest to the installation have been identified.			

A map showing these locations relative to the installation is included in Appendix 1

These receptors are all at some distance from the installation and are therefore unlikely to be impacted by fugitive emissions.

However there are a number of business premises adjacent to the southern boundary of the installation that could be impacted by fugitive odour emissions arising from normal activities. The prevailing wind is from the south west and will tend to carry any odours to the north east of the site thereby minimising potential impact on these premises.

These factors, while beneficial, do not replace the requirement to use best practice or BAT to prevent (or at least minimise) potential fugitive odour emissions. The activities with the potential for odour emissions are identified below and the design/operational techniques used to prevent fugitive emissions from each activity are identified below.

The installation is adjacent to an operating landfill and community recycling centre.

### **Potential sources of odour emissions**

The BREF/BAT Conclusions documents identify that there is potential for odour emissions from waste delivery and storage activities (BAT 21), i.e. from the RDF Receipt & Storage Hall.

### **RDF Receipt & Storage Hall.**

There is potential for odour to be generated when tipping, moving and feeding RDF within the RDF Receipt & Storage Hall. The following design features and operational procedures will prevent emissions of odour: -

- The Hall is a totally enclosed building,
- The vehicle doors are kept closed except when vehicles are entering or leaving the hall,
- The doors are fast acting automatic doors,
- The hall is maintained at sub-atmospheric pressure with the primary combustion air fans continuously drawing air from the hall,
- RDF is delivered in closed containers minimising the potential for odour release,
- No parking of RDF delivery vehicles (or other HGVs) is permitted onsite. On arrival, RDF delivery vehicles go directly into the Hall and once empty leave the site,
- RDF inventories are run down/minimised during planned shutdowns,

- RGF can be removed from the Reception Pits and Storage Bunker into road trailers for transfer to suitably licenced waste management facilities in the event of extended unplanned shutdown,
- Robust inspection and maintenance procedures are in place to ensure reliable operation of equipment,
- 2 off dual purpose cranes mean that both combustors can continue to operate in the event of a crane failure,
- Good housekeeping procedures to prevent the build-up of spillage within the hall,

These are all considered to be BAT measures to control odour.

The following additional measures can be retrofitted in the unlikely event the measures outlined above prove inadequate and odour emissions prove to be a problem: -

- De-odourising systems can be installed within the hall (usually at access doors) in the event that the odour proves to be an issue.
- Additional extraction/treatment system(s) for use during periods of low throughput or process shutdown in the event that odour proves to be an issue.

### **Bottom ash handling system,**

Bottom ash is essentially free of volatile organic or other odorous species and therefore unlikely to produce odour emissions.

The bottom ash storage/transport container is located within an enclosed building (the Ash Hall) to prevent dust emissions and would therefore also contain any potential odour. Full details of the measures in place can be found in the Dust Management Plan, Bottom ash handling system.

### **Fly ash handling system,**

Fly ash is essentially free of volatile organic or other odorous species and therefore unlikely to produce odour emissions.

The fly ash silo export loading system includes local extraction to prevent dust emissions and would therefore also contain any potential odour. Full details of the measures in place can be found in the Dust Management Plan, Fly ash handling system.

### **FGCr handling system,**

FGCr may contain organic species, however these are bound (adsorbed) onto the powdered activated carbon (as used in carbon filters) within the FGCr and are therefore unlikely to produce odour emissions.

The FGCr silos export loading systems include local extraction to prevent dust emissions and would therefore also contain any potential odour. Full details of the measures in place can be found in the Dust Management Plan, FGCr handling system.

### **Hydrated Lime handling system,**

Hydrated lime is free of organic or other odorous species and therefore will not produce odour emissions.

The lime silo filling system is vented through the silo bag filters to prevent dust emissions and would therefore also contain any potential odour. Full details of the measures in place can be found in the Dust Management Plan, Hydrated Lime handling system.

These are all considered to be BAT measures to control dust & odour.

### **Powdered activated carbon handling system,**

Powdered activated carbon is used to remove volatile (i.e. potentially odorous) species from the flue gas. It will therefore adsorb any odorous species that it comes into contact with.

The powdered activated carbon silo filling systems are vented through the silo bag filters to prevent dust emissions and would therefore also contain any potential odour. Full details of the measures in place can be found in the Dust Management Plan, Powdered activated carbon handling system.

### **Vehicle movements on site roadways**

There is a low risk of odour emissions arising from vehicle movements within the installation. The following design features and operational procedures will prevent emissions of odour: -

- All deliveries or movements of RDF are in closed containers or sheeted trailers,
- RDF discharge takes place within the RDF Receiving & Storage Hall,
- Deliveries of Hydrated Lime powder are in purpose designed trailers,
- IBA loading for export takes place within a building,
- Fly Ash, FGCr silo export systems incorporate local dust extraction to prevent spillage during loading,
- Potential dusty exports from the installation (e.g. IBA, Fly Ash, FGCr) are exported in purposed designed trailer/containers,
- Good housekeeping procedures to prevent the build-up of material on site roadways,

### **Conclusions**

The measures outlined above, combined with the location of the installation (away from sensitive receptors) lead TEGCO to conclude that a further specific odour management plan is not required.

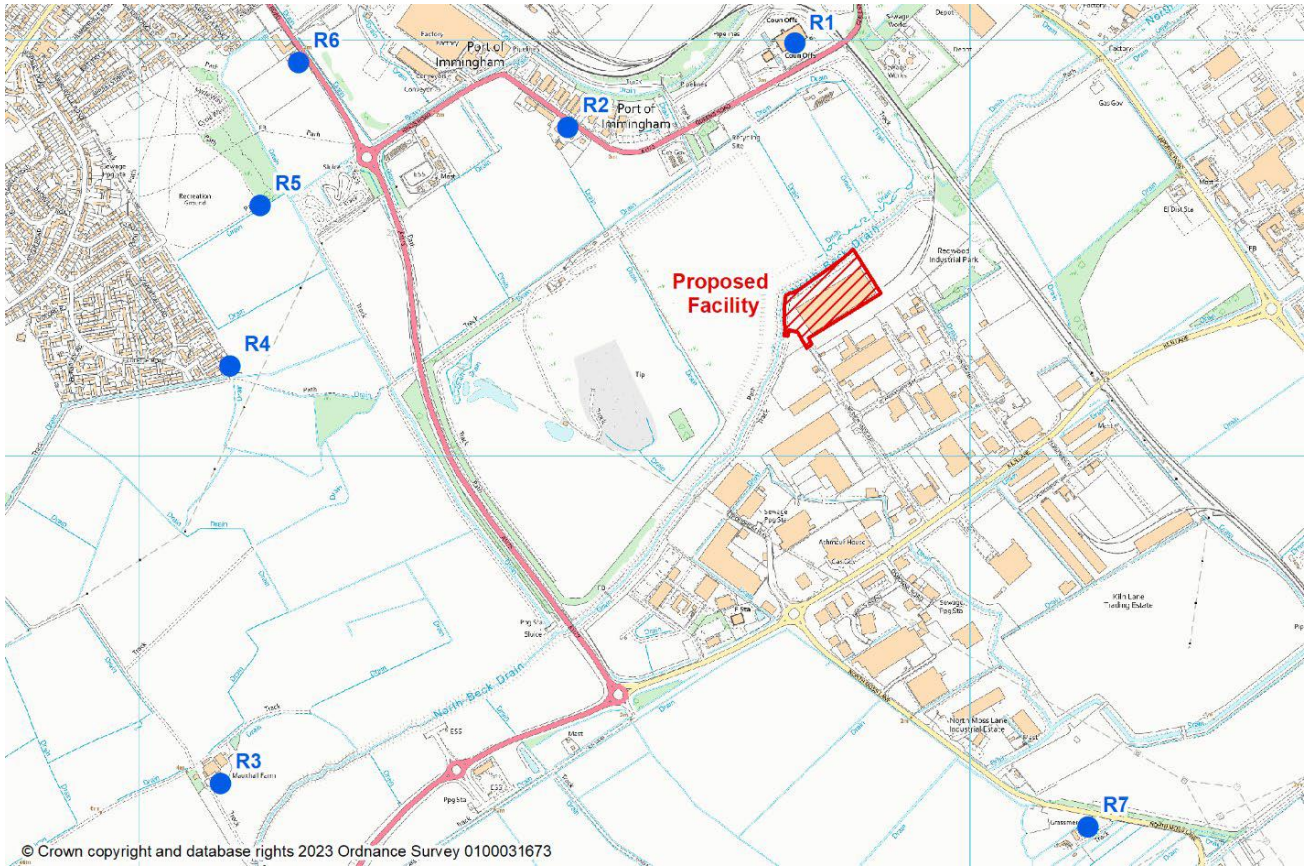
ISO 14,001 includes requirements to have procedures to monitor & review performance including emissions and complaints. In the event that odour emissions do prove to be an issue, additional measures and/or specific odour management plan will be implemented.

# **Non-Technical Summary**

## **Appendix 1**

- 1. Potential Human Receptors**
- 2. Potential Environmental Receptors**

# 1. Potential Human Receptors



## 2. Potential Environmental Receptors

