

Dust Emissions 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 3rd 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 the impact assessment (air dispersion modelling) demonstrates no significant impacts due to point source dust emissions.

However there are a number of business premises adjacent to the southern boundary of the installation that could be impacted by fugitive emissions (e.g. leaks, small spills) etc. arising from normal activities. The activities with the highest risk of fugitive emissions (e.g. storage silos) are located to the north of process buildings and this combined with the prevailing wind from the south west minimise the risk of fugitive dust emissions impacting 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 dust emissions. The activities with the potential for dust emissions are identified below and the design/operational techniques used to prevent fugitive emissions from each activity are identified below.

Potential sources of dust emissions

There is potential for dust emissions from activities at the installation, these include: -

- RDF Receipt & Storage Hall,
- Bottom ash handling system,
- Fly ash handling system,
- Flue Gas Cleaning residues (FGCr) handling system,
- Hydrated Lime handling system,
- Powdered activated carbon handling system,
- Vehicle movements on site roadways.

RDF Receipt & Storage Hall,

There is potential for dust 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 dust: -

- 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,
- Robust inspection and maintenance procedures are in place to ensure correct operation of equipment,
- Good housekeeping procedures to prevent the build-up of spillage within the hall,
- The hall floor can be damped down with water sprays and/or swept if required.

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

Bottom ash handling system,

There is potential for dust to be generated when discharging from the conveyor into the storage bunker and during transfer to road trailer prior to export, if the ash dries out due to hot weather, delay in export or operational issues. The following design features and operational procedures will prevent emissions of dust: -

- The bunker is located within a totally enclosed building (the Ash Hall),
- The vehicle doors are kept closed except when vehicles are entering or leaving the hall,
- The doors are fast acting automatic doors,
- Robust inspection and maintenance procedures are in place to ensure correct operation of equipment,
- Good housekeeping procedures to prevent the build-up of spillage within the hall,
- The hall floor can be damped down with water sprays and/or swept if required.

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

Fly ash handling system,

There is potential for dust to be emitted from the Fly Ash Silo when transferring fly ash from the boiler (and other parts of the flue gas system), emptying the silo or following spillage. The following design features and operational procedures will prevent emissions of dust: -

- Silo vents are fitted with bag filters,
- These bag filters are fitted with burst bag detection generating alarms in the control room in the event of bag failure or dust bypass,
- Local extraction is included in road trailer loading system, venting back into the silo,
- Robust inspection and maintenance procedures are in place to ensure correct operation of equipment,
- Good housekeeping procedures to ensure any spillage is immediately addressed,
- The immediate roadway can be damped down with water sprays/swept if required,
- The immediate roadway drains can be isolated to prevent any spillage washing into the surface water drainage system.

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

FGCr handling system,

There is potential for dust to be emitted from the FGCr Silos when transferring FGCr from the main FGC system, emptying the silo or following spillage. The following design features and operational procedures will prevent emissions of dust: -

- Silo vents are fitted with bag filters,
- These bag filters are fitted with burst bag detection generating alarms in the control room in the event of bag failure or dust bypass,
- Local extraction is included in road trailer loading system, venting back into the silo,
- Robust inspection and maintenance procedures are in place to ensure correct operation of equipment,

- Good housekeeping procedures to ensure any spillage is immediately addressed,
- The immediate roadway can be damped down with water sprays/swept if required,
- The immediate roadway drains can be isolated to prevent any spillage washing into the surface water drainage system.

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

Hydrated Lime handling system,

There is potential for dust to be emitted from the Hydrated Lime silos when offloading delivery vehicles. The following design features and operational procedures will prevent emissions of dust: -

- Silo vents are fitted with bag filters,
- These bag filters are fitted with burst bag detection generating alarms in the control room in the event of bag failure or dust bypass,
- Robust inspection and maintenance procedures are in place to ensure correct operation of equipment,
- Good housekeeping procedures to ensure any spillage is immediately addressed,
- The immediate roadway can be damped down with water sprays/swept if required,
- The immediate roadway drains can be isolated to prevent any spillage washing into the surface water drainage system.

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

Powdered activated carbon handling system,

There is potential for dust to be emitted from the powdered activated carbon silo when offloading delivery vehicles. The following design features and operational procedures will prevent emissions of dust: -

- Silo vent is fitted with a bag filter,
- These bag filter is fitted with burst bag detection generating alarms in the control room in the event of bag failure or dust bypass,
- Robust inspection and maintenance procedures are in place to ensure correct operation of equipment,
- Good housekeeping procedures to ensure any spillage is immediately addressed,
- The immediate roadway can be damped down with water sprays/swept if required,
- The immediate roadway drains can be isolated to prevent any spillage washing into the surface water drainage system.

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

Vehicle movements on site roadways

There is potential for dust emissions to arise from vehicle movements within the installation. The following design features and operational procedures will prevent emissions of dust: -

- All deliveries of RDF is are in sheeted vehicles or closed containers,
- RDF discharge takes place within the RDF Receiving & Storage Hall,
- Deliveries of Hydrated Lime powder are in purpose designed trailers,
- Deliveries of Powder activated carbon 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 purpose designed trailer/containers,
- Good housekeeping procedures to prevent the build-up of material on site roadways,
- On site roadways can be damped down/swept during prolonged dry periods if dust becomes an issue,
- On site roadways have macadam surface (rather than concrete) to reduce dust generation.

Conclusions

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

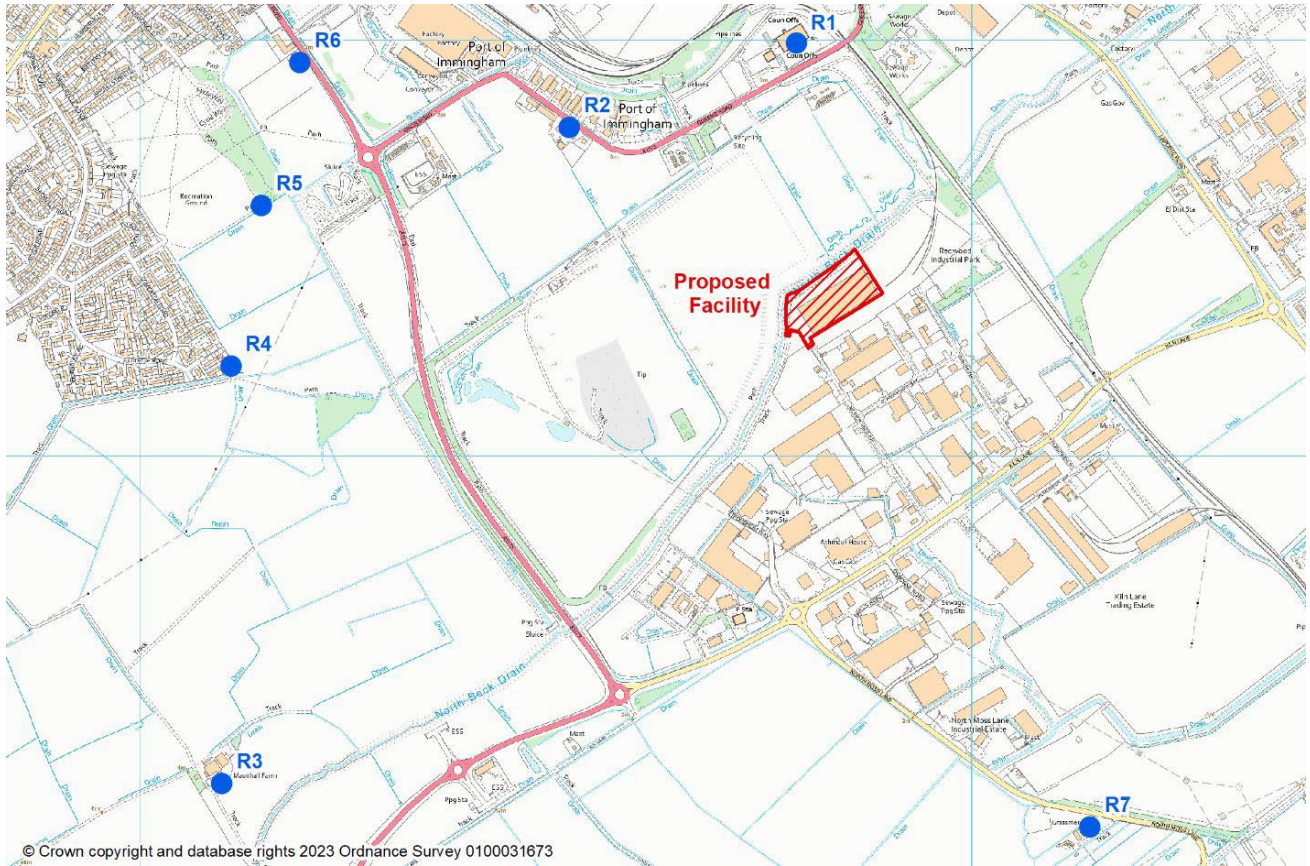
ISO 14,001 includes requirements to have procedures to monitor & review performance including emissions and complaints. In the event that dust emissions do prove to be an issue, additional measures and/or specific dust management plan will be implemented.

Non-Technical Summary

Appendix 1

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

1. Potential Human Receptors



2. Potential Environmental Receptors

