

Annual Performance Report for Waste Gas Technology (UK) Ltd

Permit No. JP3132LH

This report is required under the Waste Incineration Directive Article 12(2):- requirements on access to information and public participation. This requires the operator of an incineration or co-incineration plant to produce an annual report to the regulator on the functioning and monitoring of the Plant and to make this available to the public. To satisfy the requirements of the directive, the following information is provided in this report.

1.0 Introduction

Name of Company	Waste Gas Technology (UK) Limited
Permit Number	JP3132LH
Name of Plant	Waste Gas Technology Limited
Address of Plant	Forest Road, Newport, Isle Of Wight PO30 5YS
Phone number	01983-825669
Further information	All municipal waste that is not recycled from the Isle Of Wight area, is co-incinerated at this Gasification Plant, providing a long term, sustainable solution for waste disposal in the area as part of the integrated approach to waste management on the Island, which achieves high levels of recycling and minimal disposal of waste to landfill.

2.0 Plant description

The main purpose of the activity carried out at this facility, is to co-incinerate Municipal Solid Waste (MSW), removing energy in the form of steam and generating electricity of 1.7 MW for the National Grid. The permit covers the site and the co-incineration process, which also includes reception of waste, storage and off site transfer of residues, emissions to water, air and land, recording and monitoring conditions.

3.0 Summary of Plant operation

The facility consists of a single co-incineration line, capable of processing approximately 4 tonnes of waste per hour, allowing for an average throughput of 30,000 tonnes per year, this being dependent on two main factors: actual operating hours (plant operations based on 7,500 hours per annum) and the Calorific Value of the waste being co-incinerated, the average Net Value being in the order of 12.1MJ/Kg. The shredded waste from the non-recyclable fraction is gasified in starved air conditions and the resultant syngas fully burnt in a combustor. A Heat Recovery Steam Generator captures the heat from the combustion to produce steam which drives a steam turbine and generator, the waste gases being cleaned before being released via a 27 metre chimney.

3.1 Plant operational details 2011:

Operating Hours	6,461.75	Hours
Total Waste Co-incinerated	20,147.49	Tonnes
Electricity Exported	4,887,170	KW/h
Grate Ash Produced	2,514.26	Tonnes
APC Residue produced	1,138.74	Tonnes

Ash residues (Grate Ash/Bottom Ash) are currently sent to landfill.

Fine particle matter, Air Pollution Control (APC) residues, are removed from the flue gas stream by fabric filter and sent to specialised treatment works.

4.0 Summary of Plant Emissions

All emissions from the 27 metre high chimney are controlled to meet the emission limits included within the PPC Permit. The flue gases released into the atmosphere are continuously monitored for Particulate Matter, Total Organic Carbon (TOC), Hydrogen Chloride (HCL), Carbon Monoxide (CO), Sulphur Dioxide (SO₂) and Oxides of Nitrogen.

The Plant completed its quarterly emissions monitoring programme in accordance with its Pollution Prevention Control operating permit, using a fully MCERTS certified external contractor. All emission results were within the Operating Permit limits except where detailed in Section 5 of this report. Future emissions monitoring programmes will revert to bi-annual testing.

The Continuous Emission Monitoring (CEM) equipment was in service during 2011 for 100% of the plant operational time. This equipment is MCERTS approved and is stringently monitored and maintained with quarterly and bi-annual calibration checks being undertaken by MCERTS approved contractor/manufacturer.

Half-hourly, hourly and daily average emission data for continuously monitored emissions were supplied to the Environment Agency as per Operating Permit, on a monthly basis.

5.0 Summary of Plant compliance

Strict environmental controls and proven operating experience ensures that the facility is compliant with all conditions of its PPC Permit, as monitored by site Continuous Emission Monitors (CEM's). This is achieved through a fully automated process control system which constantly monitors all aspects of the co-incineration process. This, coupled with detailed operating procedures and fully trained staff, ensures that the plant is compliant against its Environmental Permit.

During 2011, Waste Gas Technology Ltd reported one HCL emission breach, one Mercury emission breach and one Dioxin emission breach. All breaches were thoroughly investigated and the cause of the HCL breach was found to be due to a short failure of the lime abatement injection system.

The breaches of Mercury and Dioxin were also fully investigated with no WGT operational plant failing identified as giving a reason for above ELV results being recorded. Emission test results for both Mercury and Dioxin before and immediately after each breach were fully compliant.

As part of WGT's continuous improvement strategy, a full programme of abatement system upgrade works will be carried out during the Programmed Plant Shutdown in February 2012. The upgrade works will include replacement of the transport, metering and measuring systems for both Lime and Carbon abatement processes.

At the time of submission of this report, the Plant continues to operate with reagent mixes adopted, which have proved successful in the reduction of Dioxins, with additional Dioxin analysis results proving the process continues to be within the ELV of the PPC.

All Plant non-compliances have been listed on the Public Register.

5.1 Table of Plant non-compliances:

Breach of Permit Conditions	08.04.11 - Mercury Breach 09.07.11 – HCL Breach 10.08.11 – Dioxin Breach
Abnormal Operations	
Enforcement Actions	21.05.10
General Complaints	None

No contamination and hence de-contamination has taken place within the site over the reporting period.

6.0 Plant Improvements

Waste Gas Technology Ltd adopt a Continuous Improvement Philosophy as part of its on-going operation.

6.1 During 2011, the following have been made:

- Syngas Analyser fitted to fulfil the OFGEM requirement for the awarding of 'Renewable Obligation Certificates (ROC's).
- Phase 1 upgrade of Cooling Tower distribution fans.
- Re-routing of abatement system transport lines to improve uniformity of flow.

6.2 Summary of Proposed Improvements for 2012:

- Modifications to the Fuel Transport overhead crane, to improve reliability
- Installation of a new design of Fuel Feed screw, to improve reliability
- Modifications to the APC residue silo unloading system, to improve reliability
- Modifications to both Lime and Carbon abatement metering, feed and transport systems, to both improve reliability and system flexibility, in delivering reagents in a more continuously measured stream

7.0 Other Notices

As part of their regulatory responsibility, the Environment Agency inspector visits the facility on a regular basis, and issues the subsequent Compliance Assessment Report (CAR) Form on completion.

Waste Gas Technology also holds regular meetings both with the MSW provider and the local Isle Of Wight Council.

Name: T E Spokes

Position: Site Operations Manager

Date: 06.01.12

Signed on behalf of the Company: *T E Spokes*