

Annual performance report for: Dartmoor Bio Power Limited

Permit Number: EPR/XP3134AW

Year: 2018

This report is required under the Industrial Emissions Directive's Article 55(2) requirements on reporting and public information on waste incineration plants and co-incineration plants, which require the operator to produce an annual report on the functioning and monitoring of the plant and make it available to the public.

1. Introduction

Name and address of plant	Plymouth Timber Resource Recovery Plant Unit 21-29 Belliver Way Roborough Plymouth PL6 7BW
Description of waste input	Whilst the plant is permitted to receive a variety of wastes since the plant commenced generation it has processed a single feedstock; shredded pre-sorted waste wood otherwise destined for landfill.
Operator contact details if members of the public have any questions	Hannah Reynolds (Renewable Compliance Manager) M: 07717767435 E: hannahreynolds@cogenuk.com T: 01782 384898 A: Dartmoor Bio Power Ltd C/O CoGen Ltd, Blythe House, Blythe Park Cresswell, Stoke on Trent, ST11 9RD

2. Plant description

Dartmoor Bio Power Ltd (DBPL), operates an energy from waste (EfW) plant utilising Advanced Thermal Conversion (ATC) technology, located in Plymouth.

The plant comprises of 2 gasification units which produce syngas that is fed into a single combustion chamber. The resultant combustion gases are subsequently ignited and used as a heat medium for a boiler. In the boilers the temperature is rapidly reduced through transfer of the heat energy in the gas to form steam, steam from the boiler then drives a steam turbine to generate renewable electricity which provided enough power to supply 1732 homes in 2018.

The plant has a single stack release point and uses established and proven abatement techniques to clean the combustion gases before being released to

atmosphere. The plant and the abatement techniques utilised at the facility produce several residues totalling <5% (by tonnage) of the waste input, thus reducing landfill by 95%. The primary residue is bottom ash which is approximately 3%.

3. Summary of Plant Operation

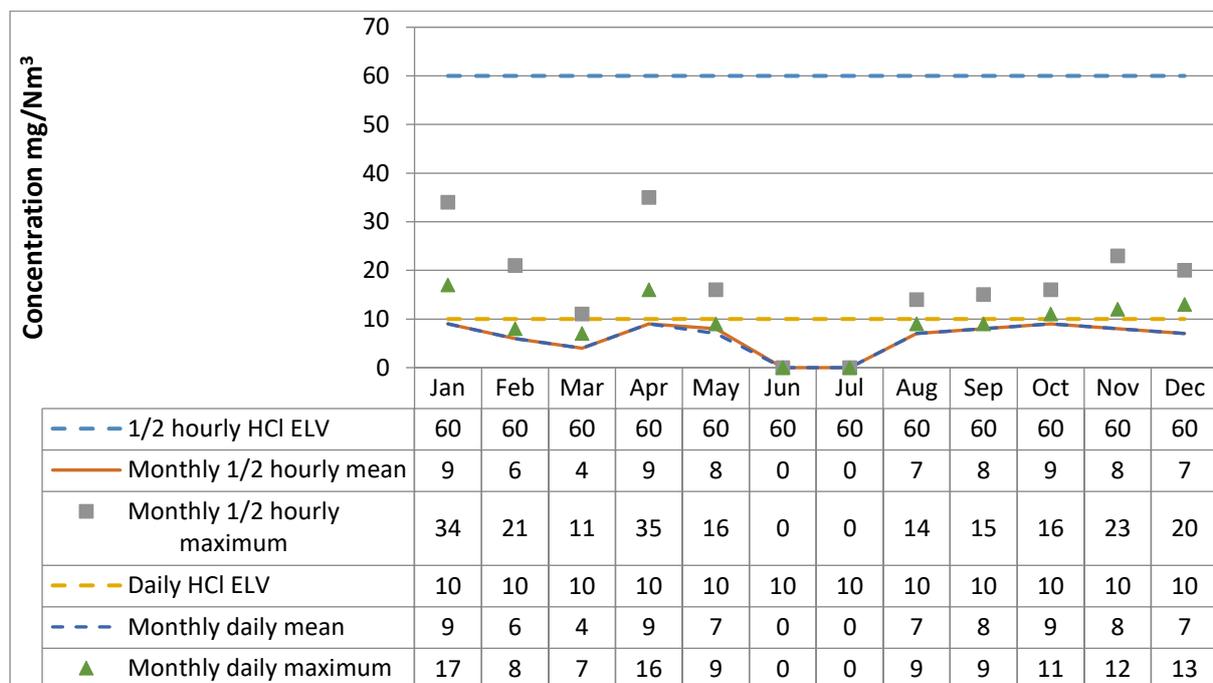
Waste wood (biomass) received	13,920 tonnes
Total waste received	13,933 tonnes
Total waste processed	13,674 tonnes
Total operational hours	3911 hours
Total hours of "abnormal operation" (see permit for definition)	8 hours
Total quantity of incinerator bottom ash (IBA) produced	304 tonnes
Disposal or recovery route for IBA	As most of the containments within the waste feedstock are concentrated into the IBA it is a hazardous waste. As such there is not currently a recycling route available for the IBA. The current disposal route is hazardous landfill.
Did any batches of IBA test as hazardous? If yes, state quantity	Yes, all IBA produced by the facility is hazardous.
Total quantity of air pollution control (APC) residues produced	108 tonnes
Disposal or recovery route for APC residues	Air Pollution Control residue is a bi-product of Hydrogen Chloride and Sulphur emissions abatement. As such the residue has a high pH and contains very high levels of chloride and sulphate making it hazardous. The residue is treated and is then disposed of in landfill.
Total electricity generated for own-use, supply to a third-party neighbour and export to the National Grid	7,966.5 MWh
Total electricity generated for export to third party and the National Grid only.	6,249.5 MWh

4. Summary of Plant Emissions

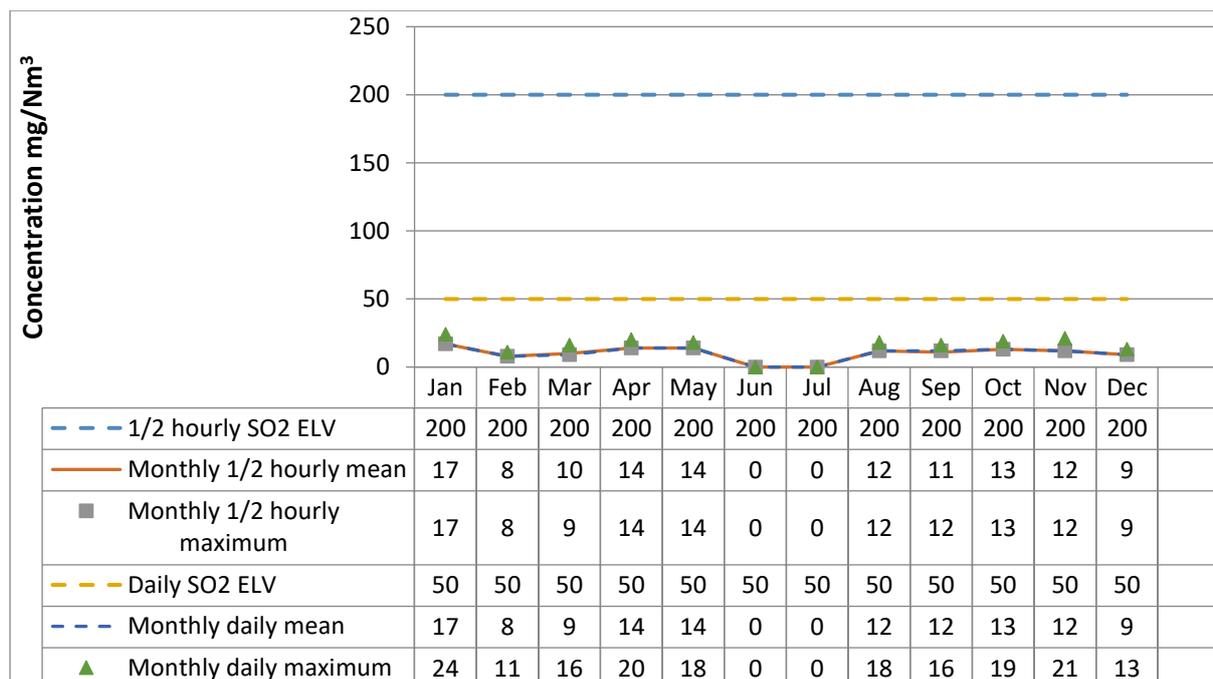
4.1 Summary of continuous emissions monitoring results for emissions to air

The following charts show the performance of the plant against its emission limit values (ELVs) for substances that are continuously monitored.

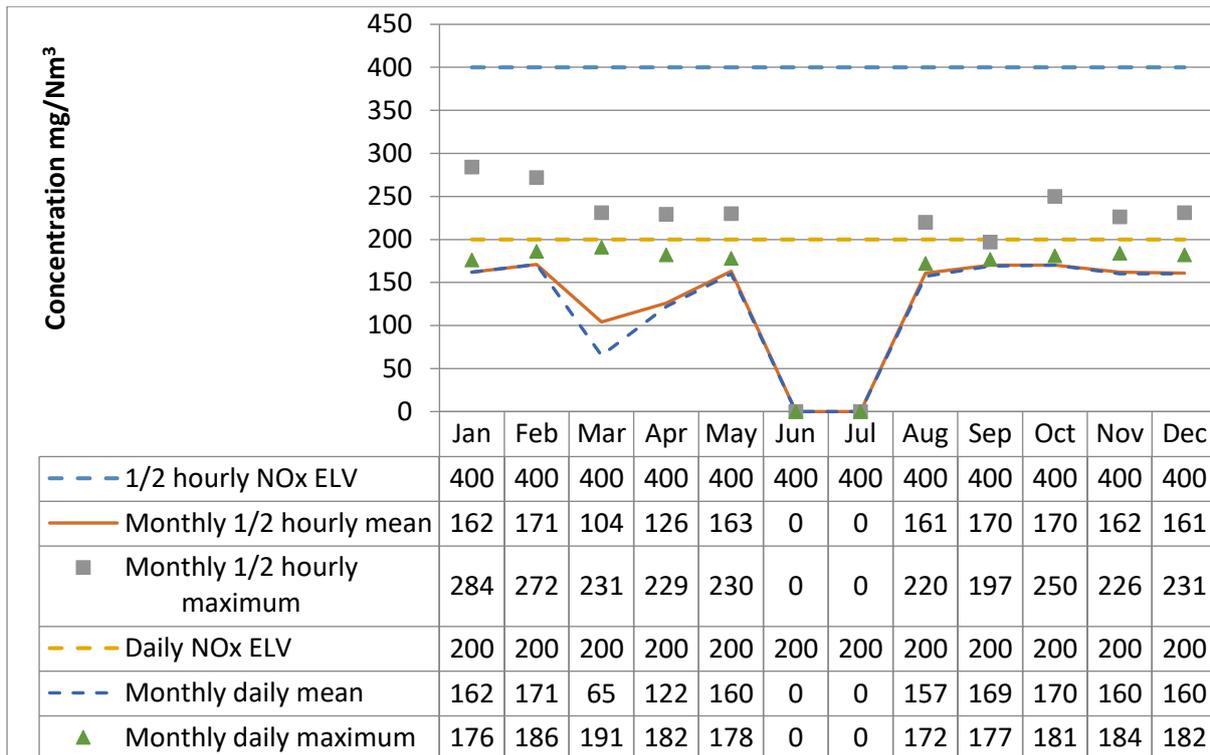
Line 1 - Hydrogen chloride



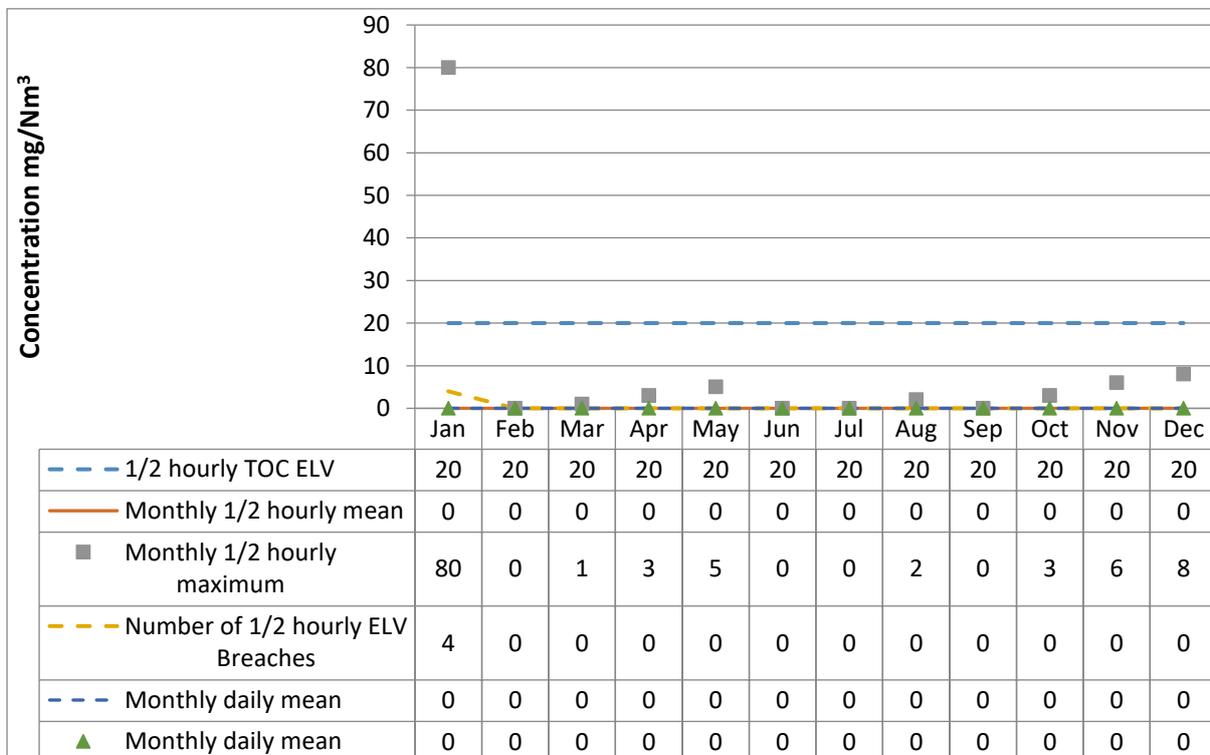
Line 1 – Sulphur dioxide



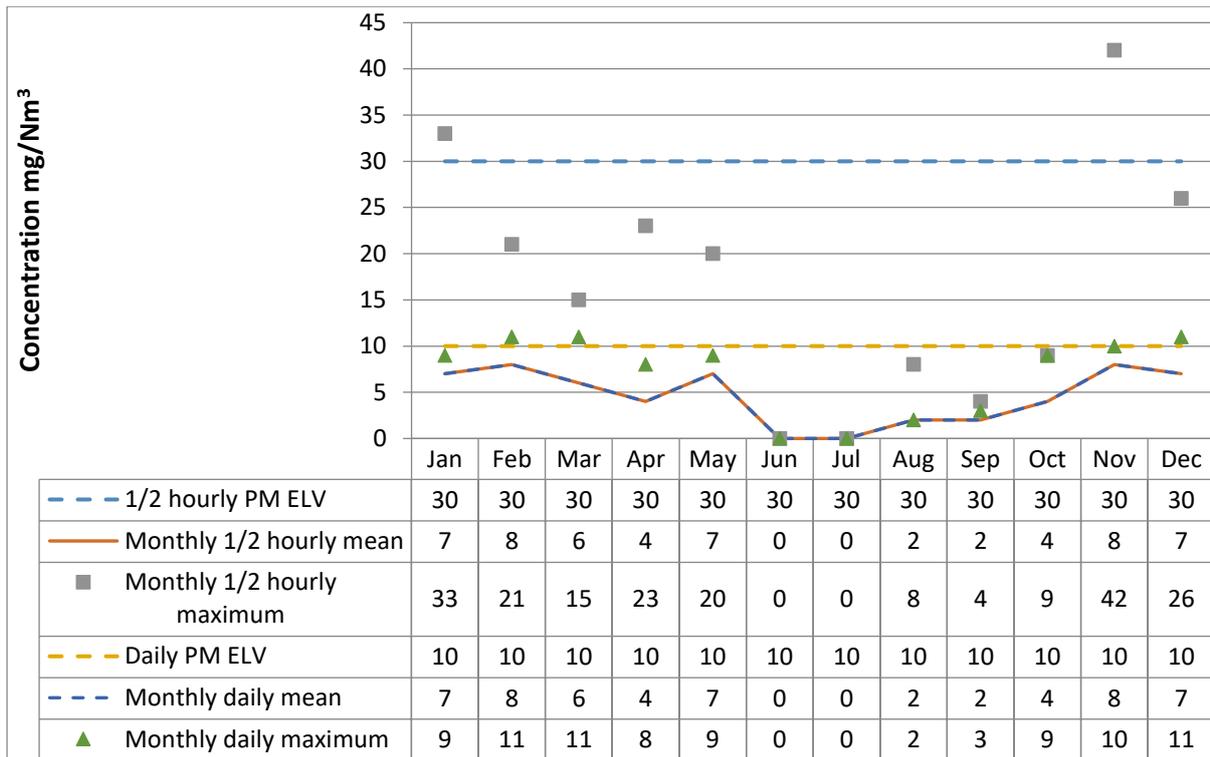
Line 1 – Oxides of nitrogen



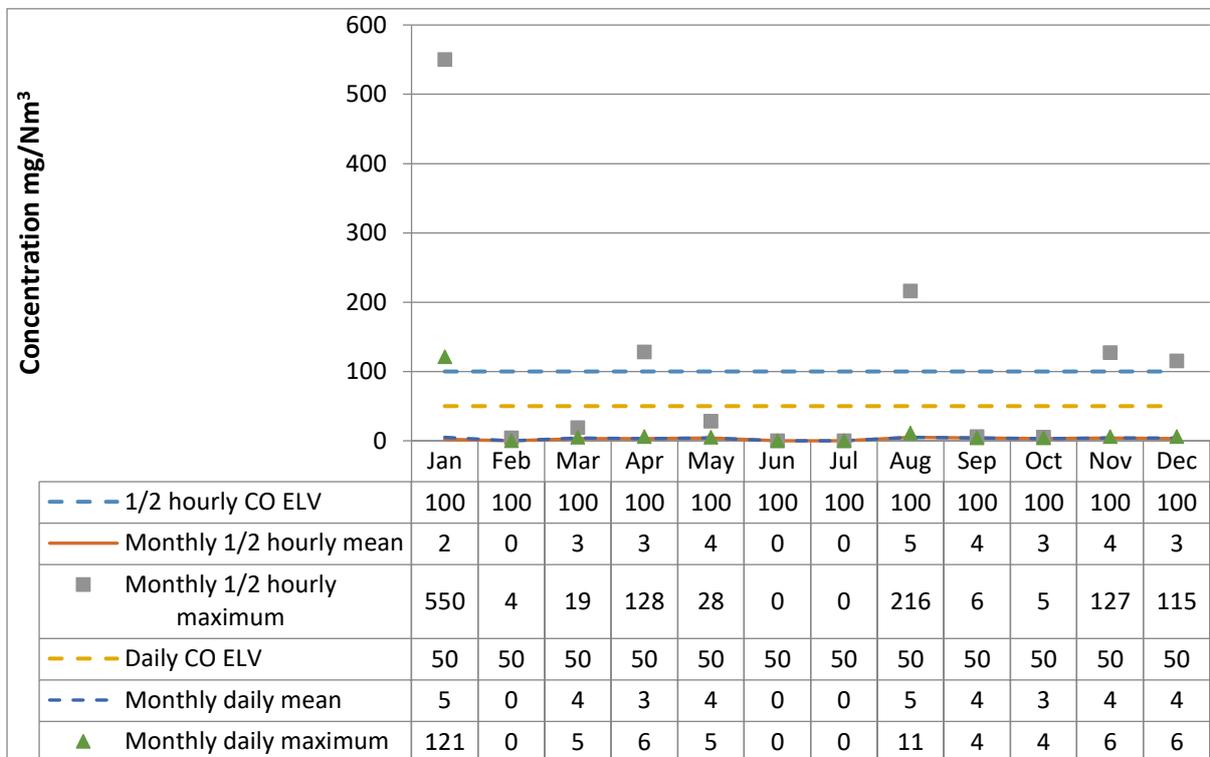
Line 1 – Total organic carbon



Line 1 – Particulates



Line 1 – Carbon monoxide



4.2 Summary of periodic monitoring results for emissions to air

The table below shows the results of periodically monitored substances.

Substance	Emission limit value	Results (Dates of monitoring campaign)	
Mercury and its compounds	0.05 mg/m ³	The plant has been in commissioning throughout 2018. The intermittent operation of the plant has prevented periodic stack testing. The first periodic monitoring campaign was undertaken in January 2019.	
Cadmium & thallium and their compounds (total)	0.05 mg/m ³		
Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	0.5 mg/m ³		
Dioxins and furans (I-TEQ)	0.1 ng/m ³		
Hydrogen Fluoride	2 mg/m ³		

4.3 Summary of monitoring results for emissions to water

The following tables summarise the results of monitoring of emissions to water for each month:

Total suspended solids

	May
Daily/monthly ELV (mg/m ³)	30 mg/l
Monthly maximum	25
Monthly average	19

pH

	May
Daily/monthly ELV (mg/m ³)	6-9
Monthly average	8.8

5. Summary of Permit Compliance

5.1 Summary of any notifications or non-compliances under the permit

Date	Summary of notification or non-compliance	Reason	Measures taken to prevent reoccurrence
None	The facility is operating under an agreed commissioning plan which include elevated trigger limits and threshold for emissions to air. These thresholds have not been exceeded.		

5.2 Summary of any complaints received and actions to taken to resolve them.

Date of complaint	Summary of complaint	Reason for complaint including whether substantiated by the operator or the EA	If substantiated, measures to prevent reoccurrence
None	There have been no complaints in 2018.		

6. Summary of plant improvements

Summary of any permit improvement conditions that have been completed within the year and the resulting environmental benefits.
Not-applicable
Summary of any changes to the plant or operating techniques which required a variation to the permit and a summary of the resulting environmental impact.
Not-applicable
Summary of any other improvements made to the plant or planned to be made and a summary of the resulting environmental benefits.
Not-applicable

7. Details of any public liaison held in 2018:

Date and time	Description	Location
None		