

## **2016 Annual Performance Report for Slough Heat and Power**

### **IPPC Permit No. CP3031SX**

This report is required under the Waste Incineration Directive's Article 12(2): requirements on access to information and public participation. This necessitates the operator of an incineration or co-incineration plant to produce an annual report for the Regulator on the functioning and monitoring of the plant and to make this available to the public. To satisfy the Directive, the following information should be provided clearly in the report:

#### **1. Introduction**

Name of Company	Slough Heat and Power Ltd. (SHP)
Plant ID	Slough Power Station
Permit Number	CP3031SX
Address	342 Edinburgh Avenue, Slough SL1 4TU
Phone	01753 213200
Contact name	Dereck Hastings
Position	SHP Director
Further information, description of waste types burned and origin.	Wood waste-derived fuels used are wood chips from pallets and clean demolition wood. Refuse-derived fuels are delivered as a pre-processed product and derived from selected paper / card / plastic wastes.

#### **2. Plant Description**

SHP has operated a power station since the 1920s and supplies electricity and steam to the Slough Trading Estate. The plant is fired on a mixture of fossil (gas) and renewable fuels. The renewable boilers that are run to raise steam are as follows:

A solid fuel, water-cooled vibrating grate design boiler (B17) uses wood waste and refuse-derived fuel processed from non-recyclable paper, packaging and cardboard. SHP used to process this fuel onsite into a product called Fibre Fuel, but production has been discontinued and the waste is now delivered to site in a pre-processed form. Environmental controls are achieved through careful waste selection, Powdered Activated Carbon (PAC) dosing to scrub the exhaust gases, staged combustion for NO<sub>x</sub> and a hydrated lime and bag filter system for particulates, SO<sub>2</sub> and HCl.

A project has been initiated to consider the construction of a new boiler (Boiler 18) which will include removing redundant plant and buildings and replace them with a solid fuel boiler. As part of this project an application has been made to the EA and a new permit variation has been sanctioned which was issued on the 14<sup>th</sup> July 2016.

There is also a gas-fired Package Boiler at the Station, but this does not fall under the requirements of the Waste Incineration Directive, so it will have minimal bearing on this report.

All of the bottom ash and fly ash is currently being sent to hazardous landfill following treatment to render inert.

Water is provided from boreholes (six greensand and one chalk) owned and operated by SHP.

### 3. Summary of Plant Operation:

(a) Vibrating water cooled grate - 1x69 MWth

(b) Annual waste throughputs:

Waste Types	Tonnes used
Refuse-Derived Fuel	0k tonnes
Wood Waste	115k tonnes

(c) Total plant operational hours in the year:

Boiler 17 ran for 7272 hours.

The main downtime for Blr 17 was for outages, routine maintenance and tube repairs.

(d) Amount of residues produced:

B17 Fly Ash	1470 tonnes
B17 Bottom ash powder / slag	3170 tonnes
B17 Flue Gas Treatment Residue	925 tonnes

(e) Fate of each residue

B17 Bottom Ash Powder	Hazardous waste landfill
B17 Bottom Ash Slag	Hazardous waste landfill
B17 Flue Gas Treatment Residue	Hazardous waste landfill

(f) Electricity produced

In 2016 a total of around 88 GWh of electricity was generated by SHP of which some 92% qualified as renewable.

#### 4. Summary of Plant Monitoring:

Pollutants measured	Continuously	Periodically
Particulates	Y	
Oxides of Nitrogen	Y	
Sulphur Dioxide	Y	
Carbon Monoxide	Y	
Total Organic Carbon	Y	
Hydrogen Chloride	Y	
Mercury		Y
Cadmium and Thallium		Y
Group III metals		Y
PCDD and PCDF		Y
Hydrogen Fluoride		Y

#### SLOUGH HEAT AND POWER - CEMS AVAILABILITY – 2016

Boiler	Boiler 17
Pollutants Measured	Continuously
Particulates	100 %
Oxides of Nitrogen	100 %
Sulphur Dioxide	100 %
Carbon Monoxide	100 %
Total Organic Carbon	99.98 %
Hydrogen Chloride	100 %

Figures include calibration downtime and periods of abnormal operation

## 5. Summary of Plant Compliance:

The following Schedule 6/5 Notifications were submitted during 2016

At the request of the inspector, Schedule 6/5 notifications were submitted at each interruption in CEMS performance. Prior to this, interruptions were reported on a quarterly basis and notifications only issued if abnormal operations resulted in an invalid day. QAL3 checks are performed on a weekly basis by the CEMs supplier contract service.

Time and Date Of Detection	Qty (In half hours of abnormal operation) and Boiler.	Description	Type	Cumulative (half hours)
				B17
24/02/2016 09:15	1 x B17	Process: VOC CEMs loss	Sch.6	1
22/04/2016 13:05	1 x B17	Process: VOC CEMs loss	Sch.6	2
01/07/2016 10:15	2 x B17	Process: Abatement (Lime/PAC) Dosing Failure	Sch.6	4

AS = All species, NR = Not reported. Cumulative totals counted in half hour periods.

### Notes:

In summary in 2016, we recorded 2 hours of abnormal operation.

No invalid days occurred during 2016.

We incurred 1x breach of conditions of the permit as a result of continuing to charge waste to the boiler at a furnace temperature less than 800oC for a period for 9hrs. All operators have been retrained and procedures have been amended, with a longer term project to apply interlocks to the boiler is being planned and currently being scheduled for the outage work commencing June 2017.

A notification was raised on the 22 February 2016, when we had a spill of turbine oil (up to 400L). The release was contained and the spill and area was cleaned up.

An additional notification was issued on the 24th October when we had a high partial day average on CO above the daily ELV.

Periodic Monitoring – During 2016, B17 underwent bi-annual compliance testing in April and November. The AST was performed in H2 2016 (November).

During independent stack testing, it was noted that a short duration reading was higher than the daily average ELV readings on the following:

### B17 H1 2016

NOx species: 27/04/2016 10:00-14:00, Average 240 mgNm<sup>-3</sup> (ELV 200 mgNm<sup>-3</sup>)

## 6. Summary of Plant Improvements:

Please see attached 2016 Annual Improvements Report.