

Annual Energy Efficiency 2016

Kirklees EfW



KIRKLEES **Energy from Waste Facility**

2016 ANNUAL **ENERGY EFFICIENCY**

AN ANNUAL REPORT ON THE ENERGY CONSUMPTION AND PRODUCTION OF THE INSTALLATION

Review (with regard to BAT) of opportunities for increasing the overall energy efficiency of the installation over the coming year

Upgrade of grate design to improve plant output

Reduction of parasitic loads is an ongoing project with low energy lighting is ongoing, replacement of aging inverters on large drives and replacing aging motors with class 1 efficiency units.

WIC system to improve combustion efficiency

Investigations into optimising the Primary air heating system should provide better drying of the waste, leading to improved combustion resulting in a reduction in supplementary oil usage to support combustion. Further work identified on turbine extraction system to improve P.A heater performance

Upgrade of support burners & control system to give improved control of fuel air ratio which will result in reduction in fuel oil use.

Use of ELP fuel to reduce fossil fuel usage.

Installation of ACC fan inverters to give improved control of fan speed to match process conditions, this should give a reduction in parasitic load.

Adiabatic cooling to ACC being investigated to improve recovery of condensate and reduce ACC fan load in warmer months, further research required 2017.

Cleaning regime being investigated for ACC matrix to improve recovery of condensate and reduce ACC fouling/ambient temperature.

Identify progress with those opportunities identified in the previous annual report

Low energy lighting fitted throughout the plant with motion detectors fitted in areas and offices which can be inhibited enabling the lights to be turned off.

New cleaning regime for super heaters enabling better heat exchange in the boiler and increasing thermal efficiency of the plant. Proved good, reduced need for plant shut down to clean and saving fossil fuel use.

Burner upgrade completed, potential for further improvement through optimisation during planned maintenance outages May & October reduction in oil consumption.

Average generated energy 2016 is 9.52Mw and 8.22Mw was Exported.(Hampered by high ambient temperature in summer 2016).

Identify the net usable energy produced per tonne of waste processed (i.e. parasitic loads arising in the installation to be deducted and unused energy discharged from cooling operations to be discarded)

Total Energy Generated (MWh) – Parasitic Load (MWh) / Waste Processed (t) = Net Usable Energy produced per tonne of waste processed (MWh/t)

72436 MWh – 9880 MWh = 62556 MWh

62556 MWh /133445 t = 0.468 MW/t

0.468 MW/t – net usable energy produced per tonne of waste processed.