

# Case Study

## 500kW Pellet Boiler

### Luton Borough Council Central Depot



An ETA HACK 500 installed as the primary heating source for Luton Borough Council Central Depot.

Ten separate buildings on a commercial and industrial park heated using an extensive heat distribution network.

Tenants include Building and Street Services, the Waste Transfer Unit and a number of commercial units.

The pellet boiler replaces 3 oil boilers. New gas boilers will provide peak heating requirement as required.

“A very smooth installation process”



**Asgard Biomass** has been installing biomass boilers in the east of England for the last 12 years, during this period dozens of boilers have been installed all over the region

#### The Installation:

- 500 kW ETA Hack wood pellet boiler
- Heating and hot water in 10 separate buildings
- Connection to an existing heating network
- 9m tall 22 tonne Collinson pellet store
- 18m freestanding chimney 600mm OD

#### The Benefits:

- Fuel Costs Reduced by 25 to 50% (heating oil comparison, 20 estimate)
- CO<sub>2</sub> Reduced by 98% or around 220 tonnes of carbon saved
- RHI eligibility will ensure an annual payment of over £34,000 (depending on use) every year for 20 years

#### Why Biomass

- Major boiler upgrade provided an opportunity to install a completely new biomass system.
- Significant RHI income and fuel savings
- A positive and on-going contribution to the environment
- Full automation, reliability and ease of fuel delivery



## Background

Asgard Biomass installed a biomass boiler at Stockwood Park for Luton Council in 2014. The trouble free installation and reliable operation of the boiler contributed to Asgard Biomass winning the contract to install the 500kW boiler for the Central Depot upgrade.

### Project Summary

- Installation of an ETA Hack 500 kW wood pellet boiler. 22 tonne pellet store, fuel delivery auger and 18m chimney.
- Complete boiler room fit-out including a 20,000l thermal store, high efficiency variable speed pumps, pressurisation unit and heat meters.
- Full integration of the biomass boiler output with the existing heat distribution network.
- Supply of RHI compliant heat meters and assistance with the RHI application process.



### Key Costs and Benefits

A system similar to the one outlined above is likely to cost around £250,000 (including civil works)

**Fuel Consumption** – Approx 152 tonnes of wood pellet vs 70,000 litres of oil

**Fuel Cost Savings** - Around £257,000 equivalent to a 25% reduction

**RHI Payments** - Around £34,000 per annum depending on use equivalent to around £900,000 over 20 years (index linked)

**Payback Period** - Approximately 7 years combining RHI income and fuel cost savings

**Project Value** – Annual gain around £34,000 per annum combining RHI income and fuel savings. Project cash flow over 20 years of £868,000

**CO<sub>2</sub> Savings** - 220 Tonnes

*Figures are approximations based on assumptions made on fuel usage and price, fuel inflation and annual RHI rates and index linked increases. RHI tariff at April 2016.*

### The Boiler: ETA Hack 500kW

Premium Austrian build

Highest industry safety levels

Fully automatic, internet access

Turbulator cleaned heat exchanger

5 Year Warranty

Lambda control

Moving grate cleaning mechanism

Flue gas recirculation

Robust industry leading auger

High efficiency 93.8%

