

Case Study

Sunken Chip Store for Farmhouse and Equine Centre

Staffordshire



An ETA HACK 90 located in an extension to an existing shed provides heating for farmhouse, conference centre and equine centre.

The system was designed for easy chip delivery using a standard tipping trailer. Wood chip is produced on an adjacent property, transported to site and tipped directly in to the sunken chip store

“Asgard Biomass works closely with customers to find the right fuel handling and delivery system”



Asgard Biomass has been installing biomass boilers in the east of England for the last 10 years, during this period dozens of boilers have been installed all over the region

The Installation:

- 90 kW ETA Hack wood chip boiler
- Heating and hot water in 3 separate buildings
- 48m of Calpex insulated underground pipe
- Asgard Biomass designed sunken chip store
- Full connection to existing properties

The Benefits:

- Fuel Costs Reduced by more than 50% (heating oil comparison)
- CO₂ Reduced by 98% or around 40 tonnes of carbon saved
- RHI eligibility will ensure an annual payment of over £6,500 (depending on use) every year for 20 years

Why Biomass

- Major upgrade provided an opportunity to install a completely new biomass district heating supply to the farm house and equine business
- Abundant supply of chip from neighbouring property
- Making a positive and on-going contribution to the environment
- Full automation, reliability and ease of fuel delivery



Background

An upgrade of the property heating systems and out-buildings provided an opportunity to install a biomass system. The boiler house was located in an extended shed adjacent to the farm house, a purpose built sunken wood chip store was sited next to the boiler to enable trailers to deliver the chip with no additional handling. 48m of underground district heating pipe was installed along with other services.

Project Summary

- Installation of an ETA Hack 90 kW wood chip boiler. 10 tonne chip store, agitator and auger delivery system
- Complete boiler room fit-out including a 2200l thermal store, high efficiency variable speed pumps, pressurisation unit and twin wall flue
- 48m of Calpex pre insulated underground pipe
- Property connections for heating and hot water including RHI heat meters and heat exchangers



Key Costs and Benefits

A system similar to the one outlined above is likely to cost around £60,000 (plus civil works)

Fuel Consumption – Approx 34 tonnes of wood chip vs 11,500 litres of oil

Fuel Cost Savings - Around £3,500 equivalent to a 50% reduction

RHI Payments - Around £6,900 per annum depending on use equivalent to around £186,000 over 20 years (index linked)

Payback Period - Approximately 6 years combining RHI income and fuel cost savings

Project Value – Annual gain around £10,500 per annum combining RHI income and fuel savings. Project cash flow over 20 years of £260,000

CO₂ Savings - 40 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 2015.

The Boiler: ETA Hack 90 kW

Premium Austrian build	Lambda control
Highest industry safety levels	Tilt grate cleaning mechanism
Fully automatic, internet access	Flue gas recirculation
Turbulator cleaned heat exchanger	Robust industry leading auger
5 Year Warranty	High efficiency 93.5%

