

Case Study

Busy Farm Shop

Essex



A 50kW ETA wood chip boiler heats a busy farm shop and café, and farm house in Essex.

The boiler room was located in an existing outbuilding near to the farm house, a chip store was constructed next to the boiler room. Wood chip is tipped into the chip store through a sliding roof. Around 30m of insulated underground pipe delivers heat to the farm shop and café complex.

“The expansion business plan included the installation of a biomass boiler”

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

The Installation:

- 50 kW ETA HACK wood chip and pellet boiler.
- Heating and hot water in 3 separate buildings
46m of insulated underground pipe
- Bespoke top-loading chip store
- Full connection into existing heating systems

The Benefits:

- Fuel Costs reduced by more than 70% (self-supply chip, heating oil comparison)
- CO₂ Reduced by 98% or around 22 tonnes of carbon saved
- RHI eligibility will ensure an annual payment of over £3,850 (depending on usage) every year for 20 years

Why Biomass

- Farm shop and café expansion provided an opportunity to install a completely new biomass district heating supply to the commercial premises and farm house.
- Major financial benefit from the RHI income on an annual basis for 20 years.
- Ready supply of wood chip.
- Full automation, reliability and ease of fuel delivery



Background

An expansion of the farm shop and café provided an opportunity to install a biomass system. The boiler house was located in an existing building near to the farm house, a purpose built wood chip and pellet store was sited next to the boiler house. Two separate underground pipe runs totalling 46m were installed along with other services during the renovations.

Project Summary

- Installation of an ETA HACK 50 kW wood pellet boiler. 3mx3m store capable of holding 15m³ of wood chip.
- Complete boiler room fit-out including a 1650l thermal store, high efficiency variable speed pumps, pressurisation unit and heat exchanger, and flue.
- 46m of Rehau pre insulated underground pipe
- Property connections for heating and hot water including RHI heat meters



Key Costs and Benefits

A turnkey system similar to the one outlined above is likely to cost around £45,000

Fuel Consumption – Approx 80m³ of wood chip vs 9000 litres of oil

Fuel Cost Savings - Around £3,000 equivalent to a 70% reduction

RHI Payments - Around £3,850 per annum depending on use equivalent to around £104,000 over 20 years (index linked)

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

Project Value – Annual gain around £6,600 per annum combining RHI income and fuel savings. Project cash flow over 20 years of £160,000

CO₂ Savings - 22 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 March 2015.

The Boiler: ETA HACK 50kW Boiler,

Premium Austrian build,

Highest industry safety levels,

Fully automatic, internet access

Turbulator cleaned heat exchanger,

5 Year Warranty

Lambda control

Tilt grate cleaning mechanism

Flue gas recirculation,

Robust industry leading auger

High efficiency 93.5%

