

Case Study

Farm Shop Complex

Suffolk



A 70kW ETA wood pellet boiler heats a farm house and farm shop complex including a café.

The boiler room was located in an existing outbuilding adjacent to the farm house, a pellet silo was installed next to the boiler room. Wood pellet transferred pneumatically in to the boiler's day hopper. Around 30m of insulated underground pipe delivers heat to the farm shop and café complex.

“The biomass installation fits well with the ethics and values of the business”

Asgard Biomass has been installing biomass boiler 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:

- 70 kW ETA PE-K wood pellet boiler.
- Heating and hot water in 3 separate buildings
- 30m of Rehau insulated underground pipe
- BM silofabrik pellet silo
- Full connection into existing heating systems

The Benefits:

- Fuel Costs reduced by more than 25% (heating oil comparison)
- CO₂ Reduced by 98% or around 30 tonnes of carbon saved
- RHI eligibility will ensure an annual payment of over £6,000 (depending on usage) every year for 20 years

Why Biomass

- Major upgrade provided an opportunity to install a completely new biomass district heating supply to the farm shops and farm house.
- Major financial benefit from the RHI income on an annual basis for 20 years
- Making a positive and on-going contribution to the environment
- Full automation, reliability and ease of fuel delivery



Background

Renovations and an upgrade of the property heating systems provided an opportunity to install a biomass system. The boiler house was located in an existing building adjacent to the farm house, a purpose built wood pellet silo was sited next to the boiler house. 30m of underground district heating pipe was installed along with other services during the renovations.

Project Summary

- Installation of an ETA PE-K 70 kW wood pellet boiler. 6 tonne pellet silo, pneumatic pellet delivery system
- Complete boiler room fit-out including a 1650l thermal store, high efficiency variable speed pumps, pressurisation unit and heat exchanger
- 30m 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 £50,000

Fuel Consumption – Approx 20 tonnes of wood pellet vs 9000 litres of oil

Fuel Cost Savings - Around £1,500 equivalent to a 28% reduction

RHI Payments - Around £6,250 per annum depending on use equivalent to around £168,000 over 20 years (index linked)

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

Project Value – Annual gain around £8,000 per annum combining RHI income and fuel savings. Project cash flow over 20 years of £200,000

CO₂ Savings - 30 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 Dec 2014.

The Boiler: ETA PE-K 70kW 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%

