

CASE STUDY 11 - BUSINESS WITH BIOMASS BOILER

Bethesda Milk, Bethesda

Just after the Gibby family bought their beef farm in Bethesda 14 years ago, the BSE crisis hit, and the beef prices fell. As a result they decided to go organic as organic beef prices were a lot higher. However the conversion to become organic has taken five years, too long for the business to wait, so the beef herd was sold off and an organic dairy herd took their place.



Unfortunately six years ago organic milk prices also fell and the demand from the large dairies decreased rapidly. Business didn't go well until they stopped producing organic milk and started selling ordinary milk to local shops.

Finally business took off and has grown in the last five years from bottling 50Litres a day to just over 3000Litres now. Although not labelled organic, the farm and dairy uses mainly organic principles, and animal welfare is second to none.

Today seven people are employed to supply milk and dairy products to most of Pembrokeshire and parts of Carmarthenshire, and 20 schools get their daily milk supplied by the company. Bethesda Milk now buys in milk from some of the other local small farms, and the output is increasing yearly.

WHY INSTALL A BIOMASS BOILER?

Bethesda Milk is a member of Green Dragon, the Environmental Standard for Business, and they wished to become Greener and reduce their carbon footprint. As well as this gas prices were increasing rapidly. They were using a 47k gas bottle every day, which, 2 years ago, cost £33.

So when the Gibbys built their new dairy in 2006 they decided to install a biomass boiler. They contacted Paul Ratcliffe from Pembrokeshire Bioenergy who helped to install a 110kw Bio-Comfort boiler system with pellet store and piping. Pellets are supplied by Pembrokeshire Bioenergy and approximately 1 tonne per week is used.



The dairy which uses heat from the Biomass Boiler





The Biomass Boiler

The Biomass Boiler runs 24 hours a day and heats the milk plant, (especially the pasteurisation process), and the washing facilities for employees and washing the plant. The boiler also provides hot water for the rest of the plant and heating for the farm house.

Maintenance is relatively easy. The boiler is switched off on Sunday and cleaned. This takes half an hour and the small amount of pot ash produced is used on the farm as compost.

COSTS

The biomass boiler cost £6000, plus £4000 for the pellet storage bin and installation.

Biomass pellets cost £130 per tonne. When the boiler was first installed it was using 3 tonnes per month however milk production is increasing rapidly and the boiler is using many more pellets.



The Pellet Store and Boiler Room at Bethesda Milk's Dairy

THE BENEFITS

- ↪ The use of Biomass is a sustainable option and promoting Bethesda Milk as a 'Green' company is good for PR.
- ↪ The company's carbon footprint is reduced.
- ↪ The Biomass Boiler is big enough to provide heat for the dairy plant, the farm and house, so the company is saving on gas prices and the use of three immersion heaters.

DISADVANTAGES

- ↪ The initial outlay was huge as Bethesda Milk received no grant to assist in the purchase of the boiler.
- ↪ There were a few minor teething problems at first but these are now resolved.

FUTURE RENEWABLE SYSTEMS

Bethesda Milk vans have been running on a mix of biodiesel and diesel.

The Gibby's wanted to install a 75kw grid-connected wind turbine, however the National Grid would have charged £200,000 for grid connection. Therefore they have decided to install a 20kw Iskra wind turbine that would just supply electricity for part of the farm. Nick Dorrell from Dorrell Renewables has been advising and will install the off-grid system.

Mr Gibby is also hoping to install solar thermal panels on the farmhouse.

USEFUL CONTACTS

- Bethesda Milk, Rob Gibby 01437 563039 / 07816 088397
- Pembrokeshire Bioenergy 01834 891224
- Dorrell Renewables 07970894701

Groups can visit the dairy and biomass boiler by appointment. Please contact Rob Gibby on the number above.