

HEATING

Case Study

Newton Farm



ABOVE: with our in-house controls and weather compensation the system efficiency is second to none.

Ecodan air source heat pump system

336kw Ecodan air source heat pump provide all the controllable heating the farmer needs to keep the chickens healthy and warm.

The system provides reliable heating down to -15°C so will cope with even the harshest UK winters.

With the payments from the Renewable Heating Incentive, the farm receives even more benefits.

“Under Floor Heating is much more beneficial to the birds and it will enable better feed conversion over their development period,”

explains Chris Chapman,
Managing Director at Bavenhill

“We have regularly installed heat pumps in agricultural buildings, people’s homes and several offices, and with the savings we will see here, I am sure it won’t be the last.”

The market-leading Ecodan range qualifies for the Renewable Heat Incentive scheme.

The incentive has been designed to reduce the payback period for both commercial and domestic heat pumps and encourage more people to adopt low carbon heating systems.

RHI enables commercial building owners, farmers and landlords to receive quarterly payments - these can amount to thousands of pounds, for up to 20 years for non-domestic buildings.

Bavenhill Mechanics are accredited Mitsubishi Partners offering extended warranties and a wealth of experience in both the domestic and commercial heating field.

Further information on the company’s range of engineering and renewable services can be found at

www.bavenhillenvironmental.co.uk

HEATING

Case Study

Newton Farm



Ecodan offers huge savings for farmer and weight gain for poultry

The installation of 336kW’s of Ecodan air source heat pumps into 2 new broiler sheds on a Herefordshire poultry farm is helping each batch of chickens reach optimum growth and increasing food conversion ratio.

It is also saving the farmer thousands of pounds a crop and enabling them to claim regular quarterly payments under the Government’s new Renewable Heat Incentive (RHI).

“This isn’t the first time we’ve fitted renewable heating on a farm, and with the savings we will see here, I am sure it won’t be the last.”

Chris Chapman

HEATING

Case Study

Newton Farm



ABOVE: The Parker family adheres to the Red Tractor welfare standards and the new shed has already proved a much more comfortable environment for the chickens, which have gained more weight because of the controllable nature of the heat provided by the Ecodan system.

The two 2,540 m² broiler sheds on Newton Farm near Bromyard, are being run on a 42-day program with temperatures inside the shed accurately controlled on a linear scale from 30°C on day one, to 18°C on day 42. This enables over 100,000 birds in each crop to gain optimum weight in a controlled, comfortable environment.

Run by Nigel Parker and his Family, the farm already has five poultry sheds running on Biomass boilers, each 1670m² and a capacity of 30,000 birds. On an average each house consumes around 145 tons of woodchip per year costing around £16,000 per shed.

That gives a cost comparison as follows

Biomass running costs £9.5/m² per Annum

ASHP Running costs £5.34/m² per Annum

“Although the new shed has slightly better levels of insulation than the older, Biomass-heated sheds, the difference is outstanding.”
Nigel Parker

Ledbury-based Bavenhill Mechanics recently installed 336kW of Ecodan air source heat pump units to run underfloor heating for the new sheds and the first 4 winter cycles for 100,000 birds has used just over 170,000 kWh of electricity, on a 3-phase cycle - which equates to around £15,300.

The Ecodans have produced 610,300kWh of heat giving a winter COP of 3.59 however with 6 months of summer ahead of us we would expect much higher seasonal performance.

The heat pump flow temperatures are reduced as the cycle advances with Bavenhill's in-house bespoke software controlling the inverter speed to match the load within the poultry house. This dramatically increases the efficiency levels of the Ecodans giving the farmer the best payback possible.



HEATING

Case Study

Newton Farm



ABOVE: 24 Air source heat pumps on the new sheds have proved much cheaper to run than the existing Biomass.

The birds start generating their own heat after about day 25, so the underfloor heating is then kept running with flow temperatures as low as 30°C to maintain shed conditions.

This helps to keep the heat in the concrete ready for the next crop, which not only creates a minimal load, it also helps reduce humidity levels if ventilation is increased.

“For the existing Biomass-heated sheds, energy consumption is equating to around 1.75kWh per bird, this has reduced to around 1.3kWh for the new underfloor heated sheds as they can be started at 29°C as opposed to 34°C in the older sheds due to the heat being exactly where we want it” comments Nigel Parker.

“We estimate this will drop to below 1.3kWh per bird using the Ecodan system and it has already proved a much more comfortable environment for the chickens.”

The system is eligible for regular payments from the RHI scheme and this sees the farmer receiving a payment of around £35,000-£50,000 per year.

The outdoor Ecodan units are coupled to Bavenhill's Hydroboxes running 200mm spacing on 20mm pipes to deliver underfloor heating throughout the new shed, around 22,000m of pipe in total, all controlled by a Trend system. This not only gives much more accurate control over the temperature changes than the previous Biomass system, it enables the Parker team to easily alter the temperature day by day, to match the requirement of the flock.

Throughout the growing period, the chickens needed a comfortable and controllable temperature, so that they can achieve optimum weight to maximise profits and deliver healthy and tasty food for the UK's tables.

Solar Installation



100kw Solar Installation to complement our renewable heating systems giving free heat at least 8 hours a day