



Ecodan offers huge savings for farmer and weight gain for poultry

The installation of six Ecodan air source heat pumps into a new agricultural shed on a Gloucestershire poultry farm is helping each batch of chickens reach maximum potential growth

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

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



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Renewable Heating Technology

Heating

Case Study

Stonehouse Poultry Farm, Gloucestershire

Making a
World of
Difference



ABOVE: The Watkins 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 1,620 m² building on Stonehouse Farm near Ledbury, is being run on a 42-day program with temperatures inside the shed accurately controlled on a linear scale from 33°C on day one, to 17°C on day 42. This enables the 40,000 birds in each crop to gain maximum weight in a controlled, comfortable environment.

Run by brothers Reg and Graham Watkins and their families, the farm already has two chicken sheds, each with a capacity of 20,000 birds. On an average 42-day winter cycle, they consume 7,000 litres of LPG (Liquid Petroleum Gas), equating to 49,000kWh, using less as the outside ambient increases.

“Although the new shed has better levels of insulation than the older, LPG-heated sheds, the difference is outstanding.” Reg Watkins.

Ledbury-based Bavenhill Mechanics recently installed six 14kW Ecodan air source heat pump units to run underfloor heating for the new shed and the first 42-day winter cycle for 40,000 birds has used just over 4,000 kWh of electricity, on a 3-phase cycle – which equates to around £400.

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. The birds tend to start generating their own heat after about day 24, so the underfloor heating is then kept running with flow temperatures as low as 20°C.



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PUHZ-W80VHA2-BSL, PUHZ-HW140VHA2Y1HA2-BSL,
PUHZ-SW140VHA, PUHZ-SW170VHA, PUHZ-SW120VHA,
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ABOVE: The six 14kW Ecodan units have proved much cheaper to run than the LPG heating on the other sheds.

BELOW: The Ecodan air source heat pumps provide underfloor heating to the 1,620 m² shed.



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 LPG-heated sheds, energy consumption is equating to around 3.75kWh per bird, due to the increased ventilation requirements needed to reduce the CO₂ and humidity levels produced by the in-house burners,” comments Reg Watkins.

“We estimate this will drop to below 1kWh per bird using the Ecodan system and it has already proved a much more comfortable environment for the chickens.”

The farm will also be eligible for regular payments from the RHI scheme and this could see the farmer receiving an payment of £11,250 per year.

The outdoor Ecodan units are coupled to manifolds running 300mm spacing on 20mm pipes to deliver underfloor heating throughout the new shed, across 6,000m 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 LPG system, it enables the Watkins 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 gain as much weight as possible to maximise profits and deliver healthy and tasty food for the UK's tables.



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ABOVE: The building also runs an air handling unit for ventilation and emergency heating, along with five Mr Slim air conditioning units for additional heating and cooling when needed during the summer months.

Ecodan air source heat pump system

Six 14kW 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.

“Indirect heating is much more beneficial to the birds and it will enable them to put on the maximum weight gain over their development period,” explains Chris Chapman, managing director at Bavenhill.

“We have regularly installed Ecodan’s into people’s homes and several offices, but this is the first time we’ve fitted the renewable heating on a farm, although 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 will see commercial building owners, farmers and landlords receive a quarterly payment – which can amount to thousands of pounds, for up to 20 years for non-domestic buildings.

Bavenhill Mechanics is an accredited Ecodan installer operating throughout the West Midlands and the Welsh border counties. Further information on the company’s range of renewable services can be found at the website: www.bavenhill.co.uk.

Ecodan heat pumps are available in individual units from 4kW to multiple systems up to 688kW, with the ability to work in tandem with other heating technologies.



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