Dairy’s Twin Turbines to be Joined by a Third E3120 Machine

Emyr Davies is the third generation of his family to farm at Triol Bach near Carmarthen in South Wales. He currently milks a herd of 250 pedigree Holstein Friesians, but has plans to expand the dairy herd to 300 cows in milk, with a total of 500 animals including youngstock and dairy followers.

“We are a pure dairy enterprise,” Emyr describes. “We try to specialise in one thing – the production of top quality milk – with the intention of doing everything as well as we possibly can.”

Despite an improvement in milk prices in recent years, the farm's margins remain under constant pressure due to rising input prices, leading Emyr to investigate new ways of earning additional revenue from his land. “Diversification is the current buzzword in UK farming and we wanted to find a way of generating a new income stream which would contribute to the farm's cashflow and also allow us to invest in the farm's infrastructure,” Emyr explains.

“We need to improve the farm's cow housing and slurry storage facilities to enable the herd to expand, but these things aren't cheap so we needed to find a way to pay for it all.”

Triol Bach is located at 800 feet above sea level and is only a short distance from the Pembrokeshire and Carmarthenshire coasts. With land rising to 900 feet above sea level, large parts of the farm are exposed and subjected to wind speeds which are strong and consistent enough to make distributed wind a viable option.

“I was keen to investigate ways of generating green energy either from solar or wind power. Wind turbines take almost no land out of agricultural production so they seemed to be perfect for our needs,” Emyr adds.

Emyr received planning permission in early 2012 for the installation of two Endurance E3120 50kW turbines which were installed by Aeolus Power and commissioned on 1st December 2012.

KEY HIGHLIGHTS

• Twin E3120 wind turbines commissioned on 1st December 2012.

• Over 438,000 kWh of electricity produced in their first full year of production.

• The installation of a third E3120 turbine is currently in planning – to supply green energy to the dairy farm.

• “Every dairy farm should have its own wind turbine to reduce electricity costs and earn extra revenue. The E3120 is a solid, reliable and quiet machine which fits perfectly with our surroundings and power requirements.”

– Emym Davies on his E3120
“Our original plan was to lease the land on which the turbines are installed, thereby giving the farm a regular monthly income,” Emyr describes. “But the more I thought about it, the more it made sense for us to own one of the turbines ourselves.”

As well as manufacturing wind turbines, Endurance Wind Power also offers farmers a land lease option that gives landowners a guaranteed, index-linked land rental income, without the need for their own capital investment.

Twelve months after the turbines were commissioned, Emyr will shortly take ownership of one of the E3120 turbines. “In hindsight we’ve been more than impressed by its performance,” he states: in their first full year of production the two turbines have produced 218,000 and 220,000 kWh of electricity respectively.

“The initial desktop survey of our site predicted that we’d get an average windspeed of 6.0m/s. In actual fact we’ve achieved an average of 6.56m/s which has helped the turbines to perform better than expected. That’s great news for us because, as well as earning a flat rate rental income, we also receive a bonus payment for each unit of power generated. When we take ownership of our turbine the income we earn will grow even further.” With both turbines producing electricity for “at least 99 days out of 100”, Emyr predicts that his investment will pay for itself in six years and go on to provide a regular income for another 14 or 15 years at least.

The success of the first two turbines at Triol Bach means that Emyr is keen to reap ever greater rewards from his farm’s abundant supply of wind. As a result, planning permission for a third E3120 turbine has recently been applied for.

The third Endurance machine will be installed close to the farm buildings so that the electricity produced can be used to power the farmhouse, milking parlour and milk cooling equipment.

“As a busy dairy farm, we use a lot of electricity to run the parlour and milk cooling equipment. The new turbine should cut the farm’s electricity bill by about 50%,” Emyr estimates. “Any surplus power will be exported back into the National Grid to earn an additional revenue. Hopefully the new turbine will be up and running before the current feed-in tariff (FIT) reduces at the end of March.” The Endurance turbines are covered by a five year warranty and Aeolus provides an annual service contract with service periods at 5,000 hours.

“The E3120 is a solid, reliable and efficient machine so we don’t envisage any major maintenance costs,” Emyr describes. “They fit well into their surroundings and are very quiet. Despite opting for the turbines to be installed on Endurance’s taller 36m mast, we haven’t received any negative comments from our neighbours or local residents. They simply view the turbines as part of the agricultural landscape.”

“In my opinion every dairy farm with a consistent supply of wind should have its own turbine to reduce electricity costs and earn an extra income. They have brought long-term financial security to our farm and have helped to future-proof the business against increasing energy prices.” Now that’s green energy in action.