

Case Study: SMALL WIND AT THE HEART OF RURAL ENGLAND

Ben Alcraft, RenewableUK's Publications Editor, visits Beech Tree Farm to look at their small wind project.



When Craig Birch sent me an email saying, "If you have any trouble finding us, my brother has a mobile..." I wondered what I was letting myself in for. But arriving at the aptly named Beech Tree Farm, in the heart of rural Leicestershire, I began to understand why Birch would be happy to distance himself from the frantic world of personal, mobile communication to which I've slowly become accustomed.

The combination of clean air, open space and gently sloping, grassy knolls was enough to keep the eyes and ears occupied for a lifetime. And as if that wasn't enough, there's everything else that Birch and his farm have going on – a man I quickly realised was a poster boy for ethical land use and sustainability; a new generation of farmer, determined to diversify and build a better, cheaper, renewable future.

He pulled up at the turbine in a ubiquitous but unassuming truck. Only this truck was a little bit special, converted to run on Pure Plant Oil (PPO) made from waste cooking oil from the farm's own oilseed rape production or sourced from a local supplier. "Once you've stopped the truck," he explained, "the engine needs to 'run on' for a couple of minutes so the cooking oil doesn't cool and gets flushed out by the diesel." This seemed an appropriate procedure for a place exuding a calm and steady pace. You might be waiting a little while for things to get going or fully mature, but when they do they're done well and with style. The farm's sloe gin production only added to its character.

In the background I could hear the gentle hum of a tractor, busily piling green waste from local councils into the compost pit, which produces 70 to 80 per cent of the fertiliser used on the farm's arable land. Another one of their sustainable credentials, this enables them to save energy and reduces landfill, minimising the impact on the environment; not to mention adding another revenue stream to their burgeoning portfolio.

But it's not all about profit – they've also taken pains to encourage a cornucopia of birds to their property, and have counted 76 species in total, an enviable array of wildlife that would impress even the likes of Bill Oddie.

To encourage this, they only trim the hedges once every three to five years which, according to the RSPB, produces thirteen times more fruit than those trimmed annually. To encourage other wildlife, they've also grown wild grass margins



Craig Birch with the Endurance E-3120 turbine which he has recently installed at his sustainable farm in Leicestershire Photo: Ben Alcraft

alongside all of the rivers and ditches on the farm. This acts as a buffer, helping to protect the water quality in their rivers.

The latest sustainable venture is a 50kW Endurance E-3120 turbine, which has been up and running for three months: not quite long enough to accurately determine whether it will meet its annual target of 140,000kWh. But at the time of writing the cumulative energy totalled 31,047kWh, a significant amount in what should have been the stillest months of the year: June, July and August. "The turbine was a slight gamble," confessed Birch, "as problems with wind speed measurements hampered an accurate reading at the early stages." But the gamble seems to have paid off, with an average speed of about 6m/s being recorded. The latest turbine statistics, taken from a screen grab at Birch's home, show a speed of 7.1m/s; very encouraging as we entered the second half of the year and the windier, more efficient months.

The planning process took about nine months from first contact with Aeolus Power to gaining planning consent, and it took another four months

for the installation. Planning encountered a degree of opposition from a small, vocal minority.

Christine Griffiths, Director of Aeolus Power (Wind-Energy), who supplied and installed the Beech Tree Farm's turbine, said, "Obtaining planning permission is still the most difficult and the most time consuming part of the wind turbine installation process. We have links with planning consultants across the UK to guide our customers through the precise requirements of the planning officers within their areas, but the process can still be arduous." Sticking points included shadow flicker and the protection of bats in and around their land. The shadow flicker argument, as Birch puts it, "was based on ignorance, coming from complainants living in a village whose boundaries lay at least 600 metres from the site, far out of reach".

The bats issue, on the other hand, was something that Beech Tree Farm took more seriously, consulting with Natural England about the turbine's proximity to hedgerows. A condition was built into planning approval that bat activity in the

"Onshore wind technology continues to develop at an extraordinary rate and it's encouraging to see that farmers are taking to small wind technology with such vigour and enthusiasm. If farmers like Craig Birch can spread the word and encourage others in their local areas to install wind power (with the support of government and the wider industry), then onshore deployment can continue to expand."



Endurance wind turbine at Beech Tree Farm Photo: Ben Alcraft

area was monitored; and results have shown that although there was some limited activity close to the turbine, they tended to use the hedgerows as a corridor and no threat has been identified.

The high-tech nature of the control centre that Endurance built is quite a contrast to the ancient land that surrounds it, which Birch and his family have been farming for twenty rapidly changing years. There is a wireless transmitter on the tower, perpetually sending all of the information remotely, allowing access from any internet terminal. This includes remote access from Canada, where Endurance is based, enabling them to monitor the situation and rapidly flag up any technical issues.

However, now that interest in the UK small wind market has moved on apace, Endurance has plans to build a facility on this side of the pond. Their CEO, Glenn Johnson, stated publicly in his keynote speech at the RenewableUK Small Wind Conference in April, that there is intent for Endurance to open a UK-based manufacturing facility, possibly as early as 2012. A spokesman for the company added: "Any plans to do so would be contingent on stability and predictability in the FIT [Feed-in Tariff] scheme. Any investment being considered will be weighed against any potential risk associated with that investment. If the rates for small wind remain competitive and there is an indication for long-

term stability, then Endurance is willing to take that risk and make an investment. Once located in the UK, Endurance anticipates supplying the entire European market from its UK-based manufacturing facility."

The farm is currently looking into getting a second turbine, which will stand taller and prouder on a proposed 36m tower. Birch is concerned, as many are, about the ongoing FIT review, and questions whether they will be able to make a second turbine pay for itself in the long term.

However, Christine Griffiths is confident that the situation will remain tenable, adding: "The Feed-in Tariffs have proved to be an effective way to meet DECC's aim of encouraging more small-scale (less than 5MW) low-carbon generation by individuals, communities and organisations not usually engaged with the electricity market. This is nowhere better illustrated than in the farming community, which is steadily embracing the installation of wind turbines.

"Any amendments to the current FITs, as they apply to individual wind turbines of 50kW in size and smaller, are likely to be minimal; a farmer or landowner siting an efficient, powerful turbine on a windy part of their land is precisely the kind of uptake that DECC wants to encourage, and in May 2011 the FIT payments for small-scale wind

were increased in line with inflation [Retail Price Index]."

In 2006, in Leicestershire and Rutland, DEFRA recorded 6,450 people working as farmers, managers and farm labourers on 2,719 farms with 192,181 acres (777.73km²) of farmed land. If a small portion of those working on farmed land can be persuaded that wind is an essential part of the energy mix, by farms such as Beech Tree, then small wind will be able to realise the potential that Endurance and Aeolus clearly believe it has. Birch also remains optimistic about the future, and continues to try to "work in harmony with nature". As he put it, "you can be progressive, increase value and be sustainable at the same time. There's no need to look at old ways of doing things, even green ways of doing things."

Onshore wind technology continues to develop rapidly and it's encouraging to see that farmers are taking to small wind with such vigour and enthusiasm. The recent announcement that Barclays have launched a £100 million fund for farmers investing in renewable energy is a sure sign that it's an investment worth making. And with Government announcing the General Permitted Development Order (GPDO), allowing people to install small wind without the need for a long and cumbersome planning process, it has never been easier to install small wind turbines on your land.

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