

# Wind Turbines: Today's Modern Farm Equipment



**Location** Harthill, Central Scotland

**Average wind speed** 7.2 m/s

**Wind incentive** Feed-in-Tariff (FiT)

**Current electric rate** 12p/kWh

## A Scottish Small Holding Chooses Renewable Wind Energy

If you live in Scotland, or have visited for a single day, it comes as no surprise that Scotland is the windiest country in Europe. Wind storms blow in off the Atlantic fairly regularly throughout the year but most especially in the autumn and winter. Sitting in the centre of all that wind is Blairmains Farm, at Harthill, Lanarkshire, a small holding of some 70 acres. Owners Eddie and Moira Ireland wanted to take advantage of that wind to help them earn income in their upcoming retirement years.

The Ireland's knew that farmers throughout Scotland have been taking advantage of the clean, domestic energy that wind turbines provide, not to mention the income they generate, so they started looking into getting their own wind turbine; maybe even two. After some research and investigation, they decided on two NPS 100-24 turbines.

The turbines at Blairmains Farm mark the first United Kingdom installations of the new 100kW, 24-metre rotor turbine. Northern Power Systems turbines not only provide power for farms across the UK but also reduce the carbon footprint of farms, contribute positively to national alternative energy targets, and reduce the reliance on power companies and their price fluctuations. For many farmers a wind turbine is considered a vital piece of modern farm equipment.

The NPS 100-24 model is based on the original NPS 100-21, with a few notable differences. Its 24 metre rotor allows it to be optimized for lower wind regimes and starts producing power at only 3 metres/second (or 6 mph) with peak power generation at 14-15 m/s. While Scotland remains the windiest country in Europe, not all areas are equally endowed with those famous Scottish gusts.

Northern Power Systems 100kW turbines are the largest in the 100kW FiT band, generating superior energy output and FiT income in average annual wind speed regimes up to 8.5 metres/second. The Northern Power 100 has a flawless track record of surviving extreme winds from the bitter colds of Alaska to the hurricanes of the Caribbean. Their advanced technology and over 2 million hours of cumulative run time makes them the most reliable and proven turbines in their class.

**“We regard the revenue we are generating as a supplement to our existing pensions and it’s good to know that poorer ground which had not been utilised or earned any income for a long time is finally generating value.”**

- EDDIE IRELAND

## Case Study

### APPLICATION FARM



### Energy solutions for farmers

Perhaps more than other kinds of business owners, farmers have to work hard to maximise profits and keep expenses to a minimum in the face of mounting uncertainties – drought, storms, disease, and a volatile market for farm produce. Although the team at Northern Power Systems can't help farmers control the weather, our state-of-the-art turbines can harness the wind and take the unpredictability out of their electrical costs. In doing so, farmers are able to safeguard their agricultural or dairy operations against rising energy costs and make their farms leaner and more profitable businesses.

### The wind turbines for Blairmains Farm: NPS 100-24

Situated in windy central Scotland, Blairmains Farm needed a turbine that could harness this abundant natural resource to provide a regular source of income. Eddie and Moira Ireland chose the NPS 100-24 because it had:

**STEADY SOURCE OF INCOME** Blairmains Farm wanted turbines that would take advantage of the UK Feed-in Tariff (FiT) and guarantee payment for the electricity they generate and feed back into the grid.

**THE "GREENING" OF BUSINESS** Farms that use wind power in their daily operations are valued by wholesalers who sell their products to discerning consumers who put a premium on sustainable and environmentally friendly business practices.

**RELIABLE TECHNOLOGY** The NPS 100-24 is designed for ultimate reliability, so you don't have to be in the business of generating electricity or hire a team of full-time professionals to reap the benefits of wind power. The last thing the Ireland's needed was to worry about their turbine failing. The robust, reliable design coupled with Northern Power's 5 year factory warranty, fleet availability over 98 percent, 24x7 monitoring and local service assured the Ireland's that their turbine will continue to perform for many years to come.

**"We are delighted with our installation and, as well as benefiting the environment, we feel we are contributing positively to national targets and reducing the reliance on power companies and their price fluctuations."**

- EDDIE IRELAND

### Farmers grow with wind power

**LOWER OVERHEAD** A farm's energy costs drop as soon as their turbine blades start spinning – allowing farmer's to put more of their profits back into their farm or processing facility.

**STABLE COST OF POWER** Whatever the market price of electricity, wind-powered electricity cost is stable for the 20+ year lifetime of the turbine, allowing farmers to safeguard their operational budget against the volatile and increasing costs of energy.

**ENERGY INDEPENDENCE** Wind power reduces future dependency on natural gas and other energy from non-domestic sources which in turn supports national energy security.

**REDUCE CARBON FOOTPRINT** Using wind power replaces fossil fuels.

### A wind turbine is the best investment a farmer can make

Harvests vary but the wind is almost always blowing. Because turbines take up only a small percentage of the land on a farm, farmers can, in effect, double-crop their land, simultaneously harvesting electricity while producing cattle, potatoes or wheat.



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Feasibility, engineering, and installation services for the Blairmains Farm installation were performed by 3R Energy Solutions Ltd.

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