

# Renewable energy case studies

## Case study 7

### Small scale wind (off-grid)



Mr Jarvis' wind turbine viewed from inside his garden

### Summary

George Jarvis' home is located in a very remote part of Perthshire and as such has no connection to the national electricity grid. He had until recently relied entirely on a diesel generator for all his electricity and heating requirements, but found this system to be overly noisy and costly. It was also very inefficient as the generator had to run at full capacity even when the power requirement was relatively small.

Initially Mr Jarvis began by looking into the possibility of connecting his generator to a battery bank to allow for more efficient use of the power it produced. It was during his investigations into battery banks that he first heard about wind turbines, which are particularly robust and suited to Scottish weather conditions.

Mr Jarvis began by contacting local turbine manufacturer, Proven Engineering Products Ltd, who helped him with his enquiries and told him he could be eligible for a 30 per cent grant from the Energy Saving Trust. Mr Jarvis then got quotes from several accredited installers for the installation of a 2.5kW wind turbine and decided to proceed. The first part of the system to be installed and become operational was the battery bank, which arrived just before Christmas and was connected up to the generator immediately. In April, when the weather conditions were suitable, the installation of the turbine took place. The installation went according to plan and only took about three days.

Mr Jarvis is very pleased with the performance of his turbine, which provides him with a 24 hour power supply that has lower running costs, is more reliable and a lot quieter. He has reduced his use of the diesel generator by between 85 per cent and 90 per cent, so he is delighted he made the investment.

### Key points

- Power output: 2.5kW at 12m/s wind speed
- Type of turbine: Proven WT2500, hub height 6.5m, off-grid
- Estimated fuel saving: approximately £330/yr
- Estimated carbon saving: approximately 2,145kg CO<sub>2</sub>/yr

### Cost

Total installation: £14,106.75

The Energy Saving Trust grant: £4,000

### Further information

In Scotland, the Energy Saving Trust (with funding from the Scottish Executive) offers homeowners grants of 30 per cent towards the cost of a renewable energy installation, up to a maximum of £4,000. Technologies eligible for funding include, but are not limited to, solar water and space heating, wind, hydro, heat pumps and automated wood fuelled boilers and stoves.

To obtain an application pack and further information contact the helpline on **0800 138 8858** or visit [www.est.org.uk/schri](http://www.est.org.uk/schri).