

Hill of Skilmafilly Wind Project



Hill of Skilmafilly,
Mintlaw,
Aberdeenshire,
AB41 8YD

Farmer- David Smith

Date of Farm Visit – 16th October 2014

David Smith is currently constructing his own wind farm at Cloffrickford, his farm near Mintlaw in Aberdeenshire. He is building three 2.3MW Enercon E70 turbines, two of which will be 92m to tip, with the other at 99m.

Background

Cloffrickford Farm consists of 800 acres of mainly arable land with a few areas of trees and rough grazing.

David started seriously thinking about developing wind turbines in 2005. He initially focussed on his neighbour's farm at Skatmonae where they installed four 800kW turbines in December 2009. As part of the grid connection for the Skatmonae project spare capacity was installed for further development. The Hill of Skilmafilly project forms the extension to Skatmonae wind farm, making use of the spare grid capacity. It took almost 5 years for the project to secure planning and finance.

Work began on the three Enercon E70 2.3 MW turbines in September 2014 with commissioning expected near the end of October 2014. The wind farm should provide enough energy to supply almost 4,700 homes off-setting around 10,000 tonnes of CO₂ each year.

The planning application for the project consisted of several key aspects including: • Previous planning application for another turbine layout • Site plans for final three turbine scheme • Environmental Statement including landscape assessment • Non-technical summary • Additional landscape assessment and further noise assessment • Fly-around videos.

The planning application was initially refused but David appealed the decision and was successful.

Summary of Hill of Skilmafilly Wind Farm	
No. of turbines	3
Turbine Capacity	2.3 MW
Scheme Capacity	6.9 MW
Hub Height	2 x 57m 1 x 64
Rotor Diameter	70.1m
Hub Heights Wind Speed	7.4-8m/s
Estimated Annual Generation	18,000,000 kWh
Income from ROC @ 42 £/MWh	£756,000
Income from Export @ 47.7 £/MWh	£858,600
Predicted Income	£1,614,600
Capital Cost (excludes grid)	£6,500,000
Payback with operational costs and interest (excludes grid)	7 years

As part of the planning application the following stakeholders were consulted:

- SEPA Transport Scotland MLL Telecom
- Building & Cultural Heritage Scottish Government
- Orange The Environmental Health Service OFCOM
- Scottish and Southern Energy Grampian Police
- Historic Scotland Aberdeenshire Council
- NATS Infrastructure Services Roads Development BAA
- Scottish Natural Heritage The Joint Radio Company
- Ericsson Scotland Gas Networks Aitkens MOD

CARES Funding

CARES provides up to £150,000 to get a project through planning. If the project fails then the borrowers are usually only liable for 5% of the amount spent.

The project can be led by a community group, a Joint Venture or rural business but it must always benefit community organisations in the locality.

Contracts

The Hill of Skilmafilly required several key contracts, these included but were not limited to;

- Project management and CDM
- Turbine delivery/construction
- Grid connection

The contract negotiation process took several months during which some of the following issues had to be agreed:

- Design liability for access tracks
- Role of principal contractor under the CDM regulations
- Delay of events
- “Bad weather” days under the Enercon contract and other supplier equivalents
- Interaction between electricals, civils and turbine supplier
- Access route issues, including the function of the route access survey

12 months after the contract was signed the first turbine was in place.

Construction Design Management (CDM)

CDM Regulations or ‘CDM 2007’, defines legal duties for the safe operation of UK construction sites. The regulations place specific duties on clients, designers and contractors to plan their approach to health and safety for construction projects.

They apply throughout the life of a construction project, from its inception to its subsequent final demolition and removal.

Funding

David Smith decided to keep the project in his own hands as opposed to renting the site to a developer. The advantage of this is not only large returns, but there are certain tax advantages to having business income rather than a rental income.

It took two years for David Smith to gain funding. During this time he approached various financial organisations, including the Co-op, before settling with Triodos. The total cost for the contract negotiations and the finance was £300,000 over an eight month period. This is made up of Triodos’ £200,000 legal and professional fees as well as David’s own legal fees which came to £100,000.

All forms of finance will require due diligence to be undertaken. This process can take longer than expected, requiring at least three months for key aspects such as planning, grid, ground conditions and in particular wind data to be assessed.

For most farmers and landowners it is usually quite a challenge to fund a large project against existing assets such as the Hill of Skilmafilly. A number of government backed organisations support funding for wind projects including the Community and

Renewable Energy Scheme (CARES) for the development stage which can be followed by the Renewable Energy Investment Fund (REIF).

Project milestones	Timeframe	Cost
Planning permission	3 years	£114,000
Grid offer	Already existed	£1.55m (Skatmonae costs)
Contract negotiations	2 months	
Secure Funding	2 years	£300,00
Site Preparation	1.5 years	Farm labour
Turbine and installation	3-4 months	£5.79m
Connection and alterations to substation, insurance	-	£296,000
Loan rate	-	5.4%
Total (approximately)	4.5 years	£6.5m

Enercon requested the site to be prepared at least four months prior to the delivery of the turbine. This allows the foundations to be laid early which gives flexibility in installation.

At the Hill of Skilmafilly scheme the main site preparation works were for access to the site. Local borrow pits supplied the stone for the foundations and tracks.

The site preparation began between spring and harvest in 2013 with the laying of the roads. Work on the crane pads began in spring 2014. All of the work was done with farm labour which minimised development costs. The concrete foundations were laid in late May of this year.

Installation and commissioning

The estimated on-site installation period for the development was 12-18 weeks, this included a programme to reinstate the working areas.

Enercon arrived on site on the 9th September. The installation process was slightly delayed due to a crane pad having to be revised because of Enercon updating the design scope. This was partly driven by the length of time that the scheme took to get through planning.

In terms of the erection of the wind turbines themselves, this is currently being undertaken and takes just one week per turbine, weather permitting.

Enercon charged €6.96 million for the turbines and their installation as well as £240,000 for the foundation works. However over the delays of the project the exchange rate greatly improved in David’s favour and he ended up paying £5.55 million instead of the £6.33 million he would have paid had the entire project ran to schedule.

“If you have apprehensions to doing a project on your own then it is worth approaching other farmers or local community associations and progressing the scheme under the CARES initiative as a joint venture arrangement”

David Smith October 2014