

## **Ail Wynt project, Moel Moelogan Wind Farm**

### **Summary**

This is a proposal for the second phase of a wind-farming project that started in Wales in 1997. Faced by the catastrophic decline in farming incomes, three Welsh hill-farming families set about harnessing their greatest natural asset - wind. Between them they formed a cooperative called Cwmni Gwynt Teg and have since developed, financed and built a wind farm on their own land.

Moel Moelogan now has two operational wind turbines that are producing electricity for the local grid system in Conwy County, Wales. The combined output of these turbines is 2.6 megawatts per hour - enough to supply 1,600 homes. Moel Moelogan is the first community project of its kind in the UK, being 100% locally owned and with all income generated remaining in the area.

The second phase, Ail Wynt, meaning 'second wind', was originally designed to build a further 11 turbines. After consultation with local people and with the Countryside Council for Wales, the plans were revised slightly and a planning application was made for just 9 turbines sited in slightly different positions.

If it goes ahead, Ail Wynt will produce 30.7MW of energy per year, enough for a further 7,300 homes. This represents 16% of the homes in Conwy County. All economic benefits from the expanded farm will remain in the area. Cwmni Gwynt Teg will donate £50,000 a year to an Energy Savings Grant scheme. This will be match funded and used to help local families and schools take energy saving measures that will reduce their annual fuel bills. Cwmni Gwynt Teg will also donate £15,000 a year to two local councils to support local initiatives. Local contractors will be used to construct the new turbines and part of the finance for the project will come from a bond issue to be offered to local residents.

### **The organisation**

Cwmni Gwynt Teg means 'fair wind' in Welsh. As described above, it was set up as a cooperative association between three Welsh hill farming families so that they could start the Moel Moelogan wind farm.

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## **Context**

Farming income has fallen by up to 75% in recent years, with Welsh hill farmers suffering from cheap foreign meat imports and the continuing restrictions put on the sale of Welsh lamb as a result of the Chernobyl disaster. On top of these, they were also hit by the loss in confidence from the BSE and foot-and-mouth crises.

The decline in the rural economy was beginning to threaten the future of many Welsh families, their language and their culture. Suicide rates within the farming community were rising sharply and many young people were leaving the area to look for work elsewhere. Reversing the trend meant finding new sources of income and employment within the area.

From a global perspective, the project also contributes to meeting the UK's targets on reducing carbon emissions and so tackling climate change. Ail Wynt is expected to reduce carbon dioxide emissions by 26,400 tonnes per year and nitrogen dioxide emissions by 304 tonnes per year. It will also contribute to the UK government's target of producing 10% of the country's electricity requirements from renewable energy by 2010.

## **Technology and use**

The Moel Moelogan wind turbines are connected to the national grid via a substation at Llanwrst, 4.5km away from the wind farm. In order to achieve this, a grid connection had to be constructed by the local power distribution company, in this case Manweb (owned by Scottish Power). The connection cost £690,000 - almost 25% of the budget.

Once the connection was negotiated and the cooperative had won a contract for the sale of their electricity to the Non-Fossil Purchasing Agency, NFPA, Moel Moelogan submitted a planning application to the local council. Planning permission was given for three turbines.

Turbine technology advanced so quickly between the time of writing the application and receiving planning permission that Cwmni Gwynt Teg realised they need only use two turbines in order to produce enough electricity to fulfil their contract with the NFPA. Planning permission for the third site was then sold to a German company called Energie Kontor to raise equity and improve the viability of the Moel Moelogan project.

The Ail Wynt turbines will use the same grid connection as the first two Moel Moelogan turbines and will produce enough electricity for approximately 7,300 of the homes in Conwy County as mentioned above. This figure is based on the turbines generating power at the UK average wind farm capacity factor of 30%. If calculated using the usual working capacity factor of Moel Moelogan - 43% - the Ail Wynt turbines could supply 10,400 homes.

## **Management, finance and partnerships**

The Moel Moelogan wind farm is wholly owned and operated by the three Welsh hill-farming families who started the Cwmni Gwynt Teg cooperative.

The group has made every endeavour from the very beginning to ensure that the local community is involved. They have achieved this in two ways. First, by 'working outwards' when seeking support, starting with the local residents and then moving on to county councils and national bodies. Secondly, they have also adopted a policy of being completely open and honest about all aspects of the development, at every stage.

An open day was held when the first turbine was erected at Moel Moelogan in September 2002. 1,500 people turned up when a maximum of 200 had been expected. Rhodri Morgan, the First Minister for Wales, officially opened the wind farm on 31st January, 2003.

Funding for the building of the first turbines at Moel Moelogan was provided by a £1.7 million loan from Triodos Bank, an Objective One Grant of £366,000 from the European Union and a Barclays Bank loan of £460,000.

Cwmni Gwynt Teg is planning to offer the local community an opportunity to invest in Phase 2 of Moel Moelogan through a bond issue. The bond issue will offer an estimated 8% per annum return on capital, with bonus payments in windy years, and is expected to raise ~£1 million. The remainder of the project costs will be covered by commercial bank loans, the Ashden Award money and the co-operative's own resources. Financial support will also come from a contract yet to be negotiated with the NFPA.

Cwmni Gwynt Teg is working in partnership with the Royal Society for the Protection of Birds to manage approximately 300 acres of land on their farms to encourage the breeding of endangered species like lapwings and golden plover.

The Ashden Award money was used to continue the work of promoting the Ail Wynt phase of Moel Moelogan.

*This report is based on information provided to the Ashden Awards judges by Cwmni Gwynt Teg, and findings from a visit by one of the judges to see their work.*

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