



Project profile: Knockawarriga, Ireland

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| Project name: | Knockawarriga |
| Owner: | SWS Natural Resources Ltd. |
| Contractors: | SWS Natural Resources Ltd. |
| Power utility: | ESB |
| Installed capacity: | 22.5 MW |
| Wind turbine type: | N90/2500 kW low-speed |
| Tower height and type: | 75 m, steel tube tower |
| Number of wind turbines: | 9 |
| Wind speed: | 8.5 m/s |
| Site: | The wind farm is located in the county of Limerick in the West of Ireland, some 30 kilometres south of the River Shannon. |
| Site description: | The land is grass-covered and partially wooded. The turbines are located on elevations of between 240 and 300 metres. |
| Building period: | November 2007 to February 2008 |
| Grid connection: | April 2008 |
| Extent of delivery: | Nordex supplied and installed the turbines. |
| Calculated annual power output: | 75,000 MWh |
| Maintenance: | Nordex Energy GmbH |
| Warranty period: | 5 years |

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In the spring of 2008 Nordex put the first turbines of the N90 type on grid in Ireland. The nine machines in the "Knockawarriga" wind farm are located on a high plateau near Newcastle West, in the county of Limerick near the village of Tournafulla. The total installed capacity comes to 22.5 MW. The nine turbines provide electrical power for some 18,000 households.

With the completion of "Knockawarriga" in July 2008 Nordex finally had a total capacity of 52.7 MW on grid in Ireland, to which a large N80 wind farm also contributes.

The story of the "Knockawarriga" wind farm started as long ago as 2001: this is the year when it was discovered that the site is suitable for developing wind farm projects. In spring 2003 building permission was granted for a wind farm with nine machines and a total maximum height (including rotor blades) of 107 metres. A short time later wind measurements were started. In 2005 there followed an application to extend the total height of the turbines from 107 to 120 metres. Permission for this was granted in the summer of 2006.

In November 2007 the erection of the nine Nordex turbines finally commenced. Construction of the necessary infrastructure – access roads and foundations – had presented a challenge from the outset as the subsoil consists of peat.



With the order for "Knockawarriga" Nordex succeeded in acquiring a new major customer: SWS Natural Resources. SWS is the market leader in the field of renewables in Ireland and operates in three areas: wind energy, bioenergy and forestry. Nordex intends to realise more projects with this company in the future.

After all, the Irish government has some far-reaching plans for expanding the use of renewable energy forms. In 2010 wind energy is to supply 15% of electricity in Ireland. By 2012 installed capacity is expected to almost triple compared to the end of 2007.