

IRELAND

MARKET OVERVIEW

Ireland has one of the best wind regimes in Europe. Its installed wind capacity stood at 1 738 MW by the end of 2012. Wind is the largest source of renewable energy in the country, representing 24% of the 6 829 MW total installed capacity (EIRGRID, 2011).

According to Ireland's National Renewable Energy Action Plan, the country would produce 16% of its final consumption from renewable sources in 2020. Renewable energy would represent 40% of the gross electricity consumption by 2020 (Sustainable Energy Authority of Ireland (SEAI), n.d.).

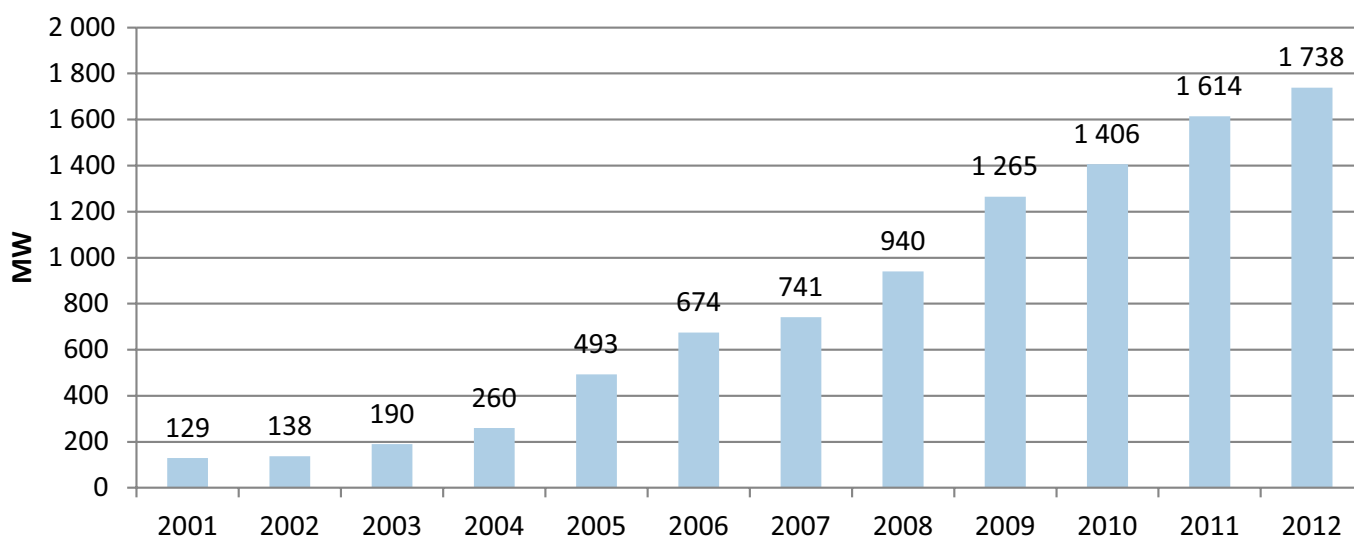


Figure 12: Cumulative Wind Installation (MW) of Ireland (GWEC, 2013)

HISTORY AND EVOLUTION OF POLICY AND REGULATORY FRAMEWORK FOR WIND ENERGY

Phase 1:

Demonstration projects

In the early 1980s several demonstration wind turbines were installed in Ireland. The first detailed investigation of the wind resource and the first significant wind energy installation were done under the VALOREN²⁴ programme funded by the European Commission (EC)²⁵ (Staudt, 2000).

In 1990, Ireland was a heavily import-dependent energy economy. The dominant energy source was oil, which

accounted for 46% of the energy mix in 1990, followed by gas. The government initiated significant reforms of the energy sector in the 1990s. Up until then the energy sector was essentially a monopoly of the Electricity Supply Board (ESB), the state-owned electricity utility (Staudt, 2000).

Phase 2:

Competitive tender, targets and market reform (1993-2005)

In 1993, the government initiated the Alternative Energy Requirement (AER) programme, to install 75 MW of renewable energy capacity by 1997. A competitive bidding process was launched in 1994, complying with European procurement rules and State Aid guidelines. The projects had to qualify technically before submitting their offers

for a grant amount. The lowest bids in each category were offered contracts up to the available capacity. The successful applicants were granted a Power Purchase Agreement (PPA) of up to 15 years, not extending beyond 2010. The national utility company (ESB) had to purchase the electricity produced, and was compensated for the net additional costs incurred from a Public Service Obligation (PSO) levy funded by electricity consumers¹²⁶.

The 1996 national strategy “Renewable Energy – A Strategy for the Future” stated wind connection targets of 31 MW per year between 2000 and 2010. The document addressed the issue of access of third parties to the electricity grid, and promoted small-scale renewable energy projects to enhance energy self-sufficiency (Staudt, 2000).

The initial phase of the AER programme was successful in terms of proposed projects, but less so in terms of actual deployment:

- » For the first round of the AER programme (1995), the initial target was set at 75 MW. A total volume of 300 MW was proposed, and 111 MW were accepted. Wind represented 73 MW of that total¹²⁷, of which only 45.8 MW was commissioned (Department of Communications, Energy and Natural Resources (DCENR), 2005).
- » The third Alternative Energy Requirement (AER 3) competition was launched in 1997, with an objective of 100 MW of new generation capacity. The final result awarded almost 160 MW, from which 137 MW is wind power.

Unlike AER 1, the AER 3¹²⁸ awarded projects on the basis of price support per kWh, not a grant level. A grant from the European Regional Development Fund was made available to the successful bidders, and was discounted from the proposed kWh price.

The initial commissioning deadline for all projects under AER 3 was extended from 1999 to 2000. Several projects failed to receive planning permission¹²⁹ or failed to proceed for other reasons, such as problems related to site access. Only six wind energy projects were developed under AER 3, totaling 37.51 MW (DCENR, 2005).

A revised strategy for sustainable energy was proposed in 1999. The 1999 “Green Paper on Sustainable Energy” set a target to install 500 MW of renewable energy capacity between 2000 and 2005, later revised to 500 MW by 2007 under AER 5 and AER 6. The strategy included concrete proposals on the liberalisation of the electricity market, planning processes and grid connection¹³⁰. The Green Paper became a central feature in the national greenhouse gas abatement strategy (DCENR, 2005).

The AER 5 competition was launched in 2001, with an initial target of 255 MW of which 363 MW were awarded. AER 6 (2003) awarded 365 MW of capacity, including two 25 MW offshore wind demonstration projects¹³¹.

Liberalisation of the electricity market

The Electricity Regulation Act 1999 (ERA 1999) established the Commission for Energy Regulation (CER), to regulate the electricity and natural gas sectors. It also created the

¹²⁴ The total amount of European Commission funding allocated to Ireland under the VALOREN programme (Council Regulation (EEC) No. 3301/86) was 25 Million European Currency Units (MECU), equivalent to approximately USD 49.3 million in 2011 USD value. The total resources devoted by the European Commission to the programme amounted to 400 MECU and Ireland’s share represents 6.25% of this (Burke, 1989).

¹²⁵ This 6.45 MW wind farm at Bellacorick consisted of 21 Nordtank machines. It performed with an average load factor of 30%. Subsequent installations have load factors around 40%.

¹²⁶ This process ensured that general customers incur the smallest price increase on their electricity bills through the operation of a Public Service Obligation (PSO) levy that was required to support RES electricity generation.

¹²⁷ According to the Irish Wind Energy Association the initial expectation was that wind would secure about 30 MW.

¹²⁸ The second round AER 2 was not open to wind energy; it focused on waste to energy and biomass projects. Contrary to AER 1, the role of the ESB in AER 3 was limited to providing connection cost estimates, connection agreements and PPAs. The remuneration was awarded on the basis of a price per kWh, not as a grant. The price was adjusted seasonally and on a time-of-day basis with the time-weighted average being equal to the bid offer.

¹²⁹ Ireland centralised the planning approval process. The Strategic Infrastructure Board was created under the National Planning Authority (An Bord Pleanála). It approves transmission plans on a national basis, and a single approval is needed for a wind developer to connect to the grid.

¹³⁰ Some key proposals of the “Green Paper on Sustainable Energy” included the liberalisation of the electricity sector, reforming the AER, and measures support the deployment of renewable energy, planning process and grid connection.

¹³¹ The amount of overall support available in both AER 5 and AER 6 was limited by government policy and State Aid clearance (N 553/01) issued by the European Commission. Due to the high degree of interest shown in the competition, a State Aid clearance for an additional 140 MW was approved in 2004.

regulatory framework for introducing competition into the production and distribution of electricity.

An independent Transmission System Operator (TSO) was created for operating, developing and ensuring maintenance of the transmission network. The TSO does not own the lines, and the transmission owner (now called EirGrid) was to carry out the construction and maintenance. Renewable electricity suppliers could sell their electricity directly to the final customers. However, the grid planning and connection permission process became an issue. The TSO faced difficulties in handling the large amount of requests received in the years 2003-2004.

Up until 2004, the applications for connecting to the grid were processed on a case-by-case basis. In October 2004, a joint system operator was proposed, based on a centralised approach. Applications were grouped based on their geographic locations and the level of electrical interaction with the grid (CER, 2004). The installed wind power capacity increased rapidly from 169 MW in 2003 to 744 MW at the end of 2006.

In addition, it was essential to reinforce the grid capacity to integrate large amounts of variable electricity supply. In 2003, the Republic of Ireland and Northern Ireland

decided to create an all-island energy market. In 2007, the Single Electricity Market (SEM) became a cross-border wholesale electricity market¹³².

Phase 3:

Feed-in tariff programme (2006-2010)

Ireland's first renewable energy feed-in tariff (REFIT) programme was launched in May 2006 and approved by the European Commission State Aid regulations in September 2007. The programme aimed to more than double the contribution of renewable energy technologies from 5.2% in 2005 to 13.2% in 2010 (initial target under Directive 2001/77/EC).

The bidding process under the AER was replaced by a feed-in tariff scheme. Due to low bidding prices and lack of profitability for many projects, a significant amount of the wind capacity awarded had not been built.

The feed-in tariff scheme was funded through the Public Service Obligation levy charged to all electricity consumers. This levy is revised every year by the regulator, based on the amount of projects eligible for the payment of the feed-in tariff. The power purchase agreements were valid for 15 years.

Details of the Public Service Obligation (PSO):

- » The legal basis for the PSO was set out in Section 39 of the 1999 Electricity Regulation Act. Statutory Instrument No. 217 of 2002 under Section 39 required that the CER calculates and certifies the costs associated with the PSO, and set the associated levy for the required period.
- » The PSO levy took into account the estimated and actual costs incurred in undertaking generation activities, which were covered in the relevant PSO legislation.
- » The PSO levy year ran from 1 October to 30 September. The CER collated information from all licensed electricity suppliers to calculate the levy for the upcoming year. The feed-in tariff was eligible to suppliers notified to CER for the next PSO period.

¹³² The grid capacity needed to be increased in order to integrate the renewable energy production. The Republic of Ireland in the south and Northern Ireland in the north had committed to creating an all-island energy market. A joint steering group was established in 2003 (International Energy Agency (IEA), 2007). The new cross-border wholesale electricity market became operational in 2007. In the south, the Electricity Regulation (Amendment) (Single Electricity Market or SEM) Act 2007 was signed in March 2007. The SEM Act amended the 1999 Electricity Regulation Act to establish and operate a single competitive wholesale electricity market on the island (CER, 2011).

¹³³ The REFIT 1 scheme was open for applications until 31 December 2009. No new applications were accepted after that date. Projects accepted into the scheme were granted a time extension to become operational, and continue to be developed.

¹³⁴ The estimated additional cost for the first 400 MW of capacity was EUR 119 million (USD 171.9 million). Under REFIT 1, the tariff amounted to EUR 57/MWh (USD 82.36/MWh) for large-scale wind and EUR 59/MWh (USD 85.25 /MWh) for small-scale. The feed-in tariff is protected from inflation (DCENR, 2012).

¹³⁵ The East-West Interconnector will connect the Irish power system to the UK electricity grid through undersea and underground cables. The Interconnector will have a capacity of 500 MW.

Under the terms of the REFIT scheme, each generator entered into a PPA of 15 years with a licensed supplier. In the first version of the feed-in tariff (REFIT 1), similar to the AER scheme, the energy suppliers were compensated for the net additional costs they incurred.

The balance was funded through a PSO levy on the consumers (EC, 2007). At its launch the scheme was limited to 400 MW¹³³ which was later revised to 1 450 MW. The rules of REFIT 1 allowed the government to extend the capacity limitation by public notice¹³⁴.

Under the REFIT 1 scheme, 1 242 MW of renewable energy capacity was added to the system. Detailed rules for the second version of the feed-in scheme (REFIT 2) were to be announced in 2012 (Department of Communications, Energy and Natural Resources (DCENR), 2012).

In 2010, Ireland produced almost 15% of its electricity from renewable sources, exceeding its target of 13.2%. Due to the country's high wind resources (average capacity factor of 34%), the feed-in tariff was significantly lower than in other OECD countries. However, since 2009 broader economic concerns have affected the rate of new wind installation, with just 153 MW completed in 2010, down from 221 MW installed in 2009 (Wind Power Monthly Magazine, 2011).

CURRENT CHALLENGES

Ireland's banking crisis caused difficulties for the wind sector. The banks became extremely selective and would only lend to developers with a strong track record. The limited availability of credit created difficulties for small players who had approvals and grid-connection offers in place to proceed to the construction stage.

Although some efforts have been made to improve grid capacity, more efforts are required for Ireland to meet its 2020 targets. In 2006, the government requested that the CER initiate the construction of an East-West Interconnector to Britain by 2012. The project led by

EirGrid is a part of the National Development Plan 2007-2013 (Edwards, 2010), and was completed in September 2012¹³⁵. Furthermore the "all-island grid" brings together the grids of the Republic of Ireland and Northern Ireland. In the beginning of 2011, more than 1.8 GW of wind had been installed on those territories, accounting for more than 10% of their cumulative installed capacity¹³⁶.

Until 2011, wind farms were regularly curtailed, and financially compensated. The regulators examined the effect of 4.6 GW of wind power capacity on the system operation¹³⁷. The curtailment rules for wind were then reviewed¹³⁸ and in the last quarter of 2011, the regulators started to consider a new policy on curtailment. The rules favour established wind farms over new developments and have resulted in some projects being stalled¹³⁹.

CONCLUSION

Ireland has one of the strongest wind regimes in Europe. However, its limited grid capacity and domestic demand is insufficient to absorb the large wind production, which is leading to curtailments¹⁴⁰. The first steps have been taken towards developing interconnectors with Northern Ireland and the UK, and are expected to solve a large part of the curtailment problem.

In the past decade the energy policy has been driven by concerns about energy security, cost-competitiveness and environmental protection. The deployment of renewable energy sources in the electricity sector has been increasing steadily in recent years. The country has committed to increase the share of renewable energy in electricity consumption to 40% by 2020.

Under the AER, a significant part of the capacity had not been built, and the scheme was replaced by a feed-in tariff system. The failure of the tendering system was due to the low price offers proposed, and the lack of profitability of the projects. This experience is similar to that of the UK with the NFFO tenders (see page 117 for further discussion) (IEA, 2007).

¹³⁶ Currently there is a high-voltage DC line linking the island (Republic of Ireland & Northern Ireland) grid to the UK. The maximum load capacity of this HVDC line is 6.5 GW and the minimum load capacity is 2.4 GW

¹³⁷ As well as looking at how generation should be scheduled and dispatched, the review is also studying rules for constraining generation off the system at times of congestion.

¹³⁸ Wind in Ireland was only curtailed if there was a system security issue. In the event of a system security issue, curtailment is applied in the following order: indigenous peat stations, large combined heat and power, hydro, and then wind. In 2009, wind was primarily curtailed due to transmission maintenance occurring in a high wind area with low load. New transmission is under study. EirGrid expects to limit curtailment due to congestion (Rogers, Fink and Porter, 2010).

¹³⁹ Rules limiting the amount of wind energy on the Irish electricity system prompted state energy company ESB to put a EUR 40 million (USD 54.91 million) development on hold in February 2012 (O'Halloran, 2012).

¹⁴⁰ Eirgrid completed a 650 MW interconnector between the UK and Ireland in August 2012. Another 8 GW of interconnection capacity is under construction.

The current renewable energy feed-in tariff (REFIT 1) scheme is capped at 1 450 MW, most of which will be provided by projects which have already received connection offers. Only a small part of the 3 000 MW, currently under process for connection offers, will be eligible to receive incentives under the scheme, creating considerable uncertainty for developers. The upcoming

REFIT 2 might resolve some of these issues. The final design of the support mechanisms and/or tariff bands that result from these discussions will be critical to the future of wind power development in the country. Furthermore, the outcome of ongoing discussions between developers and regulators on the latest policy guidelines for curtailment will be critical to future investments.



Antarctica ©Chris Wilson/GWEC

ANALYSIS ON ENABLING CONDITIONS FOR WIND ENERGY

<p>Effective rule of law; and transparency in administrative and permitting processes</p>	<p>Continuous support and a long-term policy framework were available from 1993 to 2010. The Sustainable Energy Authority of Ireland completed a series of surveys to assess the public attitude towards wind farms and future energy policy. The public is generally positively disposed to the introduction of wind farms. Detailed local planning guidelines and environmental guidelines are available.</p>
<p>A clear and effective pricing structure</p>	<p>The tariffs were first determined through auctioning under the AER programme, followed by a feed-in tariff system. A regulatory review after the financial crisis has had an adverse effect on the growth of, and confidence in, the wind industry. The sector now expects a review of the feed-in tariffs (REFIT 2).</p>
<p>Provisions for access to the grid (incentives & penalties for grid operators)</p>	<p>Electricity produced by renewable sources has priority over other energy production facilities. The national grid development strategy, Grid25, plans for the grid expansion until 2025. The share of electricity from renewable sources should reach 40% by 2020. At present planning regulations are not in phase with grid connection timelines. The standard planning permission granted to a wind farm development typically expires after five years, but it can take up to six years to process a grid connection application (Staudt, 2000).</p>
<p>An industrial development strategy</p>	<p>Regulatory and policy support were made available for the growth of a domestic wind industry.</p>
<p>A functioning finance sector</p>	<p>After the 2009 financial crisis, commercial lending was difficult to obtain, in particular for developers with limited track records.</p>
<p>Expression of political commitment from government (e.g., targets)</p>	<p>There is a long-term renewable energy target of 16% by 2020 under the 2009 European Renewable Energy Directive. However, regulatory support and secondary legislations are not in place, which causes significant delays to projects.</p>
<p>A government and/or industry-led strategy for public & community buy-in.</p>	<p>EirGrid organises public engagement through public education efforts and outreach for specific transmission projects.</p>
<p>An employment development strategy</p>	<p>Not Applicable</p>
<p>NOTE</p>	<p>Despite a difficult economic atmosphere, the development of a green economy is set to be a key driver of the economic recovery and future growth of Ireland.</p>

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