

## Wind Generation in Ireland

**How the changing market is making it hard for generators to forecast revenues**



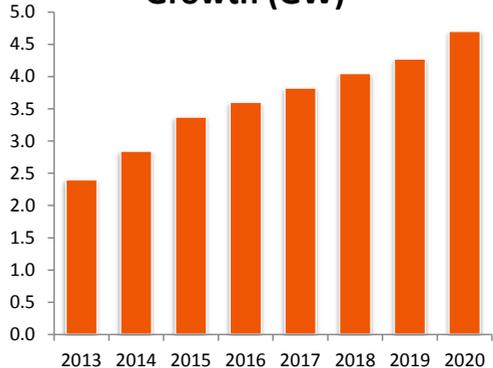
With enviable wind resources, ambitious renewables targets and generous support schemes, onshore and offshore wind generation in Ireland offers investors the potential to make healthy and stable returns at a time when yield continues to be elusive. However, the level of regulatory uncertainty currently facing the wind industry across Ireland, with several structural market changes occurring at the same time, has created a number of challenges for both current participants and potential investors in the Single Electricity Market (SEM).

## Wind Generation in the SEM

Ireland's significant wind resources, as well as onshore wind generation's status as the most economic renewable technology, means that wind power is expected to be the driving force behind meeting the target that 40% of electricity should be generated by renewables across the Island by 2020.

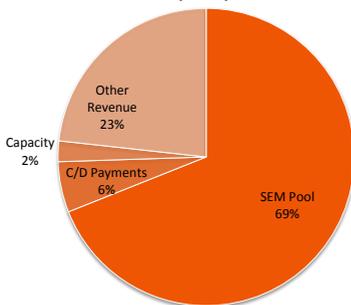
Under a number of past and present support schemes, wind capacity within the SEM has grown from 182MW in 2002 to 2,325MW in October 2013 – making up approximately 16% of total generation in 2013. In order to meet the 40% target, EirGrid and SONI estimate that this will have to double to between 4,400MW and 4,900MW by 2020, depending on future demand for electricity.

### Forecast Wind Capacity Growth (GW)



Bringing the required capacity online is going to require a huge amount of investment that both governments have so far looked to incentivise through generous renewable support schemes. However, the level of regulatory uncertainty facing the Irish wind industry, due to the energy, capacity and system services markets all being reformed simultaneously, has created a number of challenges for both current participants and potential new investors, most notably affecting their ability to accurately forecast future asset revenues.

### Wind Generators' Revenue by Source (2013)



In 2013, around 69% of the revenue for an average wind generator came from the energy market, while only 2% came from capacity payments. Revenue from Contract/Difference (C/D) Payments (which includes Contracts for Differences, Renewable Energy Feed-in Tariff (REFIT) payments and Renewable Obligation Certificate payments) were also small at 6%, possibly because the 65.71 EUR/MWh average System Marginal Price (SMP) price for the year was not far below the 2013 REFIT reference prices for large (69.2 EUR/MWh) and small (71.7 EUR/MWh) wind generators.

Looking forward, there are a number of issues which could have significant impact on future wind generation revenues.

### ***With several markets in which to sell power, wind generators may not earn the reference price***

Currently the REFIT top-up is relative to the ex-post SMP from the SEM Pool. Under the new Energy Trading Arrangements (ETAs) due to start in 2017 generators will be able to sell their power in a range of different markets. As a result, the Regulatory Authorities will have to decide on a new market reference price. Their aim is to make that price as representative of the 'actual' price that wind generators are receiving. Depending on how individual wind generators then trade, the top-up they receive could be less than what they need in order to achieve their reference price in total.

### ***Wind generators will be exposed to imbalance prices, whenever their forecasts are inaccurate***

Under the new ETAs, all parties will have responsibility for self-balancing. This means that generators will be penalised when their outturn generation differs from their contracted position. Since wind generators will be required to take a market position based on a forecast of how strong the wind will be, they will be exposed to imbalance prices whenever their forecast is inaccurate. Whether or not any imbalance charges can be offset against REFIT reference prices is unclear, although improved alignment with the GB market's trading arrangements should help wind trade efficiently on the interconnectors to balance their positions intra-day.

### ***Plans to change capacity remuneration may put wind at a disadvantage compared to other generation technologies***

Under the new ETAs, the current capacity payment to generators will be replaced by Centralised Reliability Options. This will be a quantity-based Capacity Remuneration Mechanism, under which generators will receive regular payments in exchange for paying back the difference between a predetermined 'strike price' and the SMP, whenever the SMP is above the strike price. However for wind generators, there is far greater uncertainty as to whether they will actually be available to generate since price spikes are most likely because wind is not generating. This suggests that wind would therefore be penalised more than any other technology class, forcing generators to factor this implicit penalty into their Reliability Option offer, likely making them uncompetitive. The loss of capacity payments represents a risk to revenues above REFIT floor levels and to generators in their post-REFIT periods.

### ***Any delays to DS3 will lead to higher levels of uncompensated curtailment for wind generators***

Wind generators benefit from priority dispatch, but can have their output reduced for system security reasons or because of local transmission constraints. While currently 'Firm' generators are compensated for any curtailment, this will change after 2017. This means that delays to DS3, the work programme to increase the possible contribution of wind in any period, will lead to higher levels of uncompensated curtailment for wind generators

***For a more detailed report into the Irish Wind Market,  
visit [www.ipaadvisory.co.uk](http://www.ipaadvisory.co.uk)***

## *How can we help?*

IPA Advisory is a leading independent advisory practice providing professional consultancy services in Markets & Transactions, Regulation & Policy and Public Private Partnerships across the Power, Oil, Gas and LNG, Water and Infrastructure sectors. Our specialist advice includes: policy development and evaluation; market and economic analysis using proprietary models; market design and reform; and capacity building and workshops.

For twenty five years IPA has been designing and developing bespoke market simulations for investors seeking to enter new markets and value investment opportunities in merchant, contracted and mixed markets. This has been complemented by regulatory risk analysis and mitigation strategy development.

Since 2007, we have supported successful deals valued at some US\$25 billion, involving over 32 GW of power generating capacity globally.

## *What services have we provided in Ireland?*

IPA has helped a range of clients understand the Irish regulatory environment and how policy changes could affect the electricity generation market. We have used our proprietary in-house power market model, ECLIPSE™, to provide forecasts of the system marginal price and capacity build-out, as well as captured prices, load factors, capacity payments and gross earnings for specific renewable portfolios.

## *Who have we recently worked with?*

- **Brookfield Renewable on its acquisition of the Bord Gáis wind portfolio.**
- **The Regulatory Authorities on their economic appraisal of DS3 system services.**
- **CDPQ on its acquisition of a stake in London Array.**
- **Marubeni and the Green Investment Bank on their acquisition of a stake in Westermost Rough.**
- **A renewable energy company considering developing anaerobic digestion projects in Northern Ireland and Great Britain.**

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