Winter Outlook 2016/17

The EirGrid Group Winter Outlook is an annual summary that provides information on expected electricity demand, and generation available to meet this demand in Ireland and Northern Ireland. The outlook covers the period from 1 November 2016 to 31 January 2017.

All-Island Summary

It is expected that there will be adequate capacity to ensure a secure supply of electricity over the coming winter period in Ireland and Northern Ireland. The all-island capacity margin is expected to be 3199 MW[1]. The margin is calculated using the all-island demand figure. All-island installed wind generation now exceeds 3074 MW which corresponds to an all-island wind capacity credit of 433 MW. The all-island fuel mix shows that the largest portion of our energy needs is met by gas (39.8%). Coal now contributes 18.6% of the all-island fuel mix while wind energy is now the second largest source of energy contributing 21.9% towards the overall fuel mix.

Ireland

- The capacity margin is expected to be sufficient over the winter period as there is a predicted capacity margin of 2424 MW[1].
- Demand growth is predicted to be higher this year with a forecast of 2.1% growth[2] in 2016 but the margin is still well within acceptable limits.
- Installed wind capacity has grown slightly in the last year to 2,418 MW, with a corresponding wind capacity credit of 348 MW towards overall capacity margin and security of supply.
- The East-West interconnector (EWIC) is expected to be fully available during the winter period and will contribute to the security of supply on the island[3].
- Demand-side response, where contracted customers are available to reduce their overall demand at peak periods, contributes 299 MW towards the capacity margin.

Northern Ireland

- The capacity margin is expected to be sufficient over the winter as there is a margin of 1073 MW[1].
- The Moyle interconnector is expected to be fully available during the winter period and will contribute to the security of supply.
- Installed wind capacity is now 656 MW, which corresponds to a wind capacity credit of 131 MW towards overall capacity margin and security of supply.
- Demand growth[2] for 2016 is low with a prediction of 0.4% in 2016.
- Ballylumford unit 6 (B6) has been decommissioned while the capacity of Ballylumford units 4 and 5 were modified resulting in an overall reduction of 219 MW of capacity in Northern Ireland.

Notes:
1. Expected value at time of data freeze (July 2016)
2. Demand Growth based on all-island Generation Capacity Statement 2016-2025 Median Forecast
3. Assumed return of EWIC from forced outage by 01/11/2016

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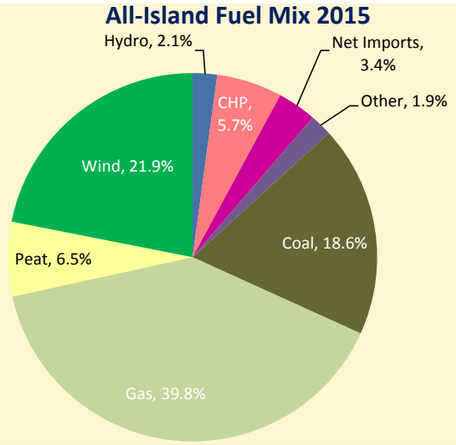
All-Island Fuel Mix

An approximate 2015 fuel mix is shown in the figure based on EirGrid Group and SEAI data:

- The all-island fuel mix shows that the largest portion of our energy needs is met by gas (39.8%)
- Wind energy is now the second largest source of energy at 21.9%
- Coal has now dropped to the third largest source of fuel, accounting for 18.6% of the all-island fuel mix in 2015
- The dependence on net imports has fallen from 10% since 2014, accounting for 3.4% of the fuel mix in 2015

Note that the fuel mix changes each year based on installed wind and how much the wind blows, plant closures or outages, as well as the relative prices of coal and gas.

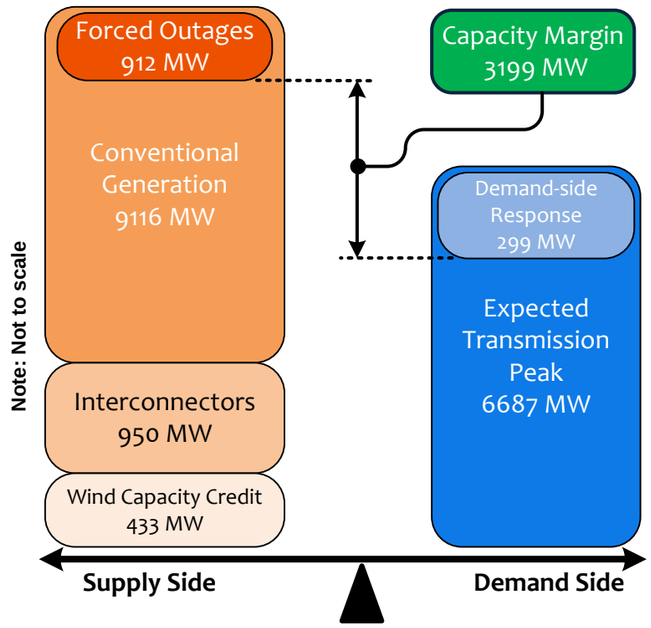


Capacity Margin and Security of Supply

The all-island capacity margin is expected to be 3199 MW over the winter period. Note that security of supply is dependent on a number of factors, not just the capacity margin. These factors include:

- **Fuel reserves:** uninterrupted reserves of natural gas from the Corrib Gas field and Moffat terminal with no shortage issue;
- **Availability of interconnectors:** 950MW of capacity has been assumed to be available over the winter period;
- **Generator forced outages:** a conservative estimate of a 10% forced outage rate has been assumed;
- **Transmission system maintenance and operation:** assumed that a fully intact network will be available over winter;
- **Transmission system constraints:** generators have to be dispatched to avoid bottlenecks in the transmission system;
- **Ancillary Services:** the availability of ancillary services will also affect capacity margin
- **Limited interconnection between Ireland and Northern Ireland grids:** north-south tie-line flow normally limited to 450 MW and south-north tie-line flow normally limited to 400 MW for system security reasons;

All-Island Capacity Margin



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