



Winter Outlook 2025/26

October 2025

EirGrid.ie



Introduction

EirGrid operates the electricity transmission system in Ireland.

We are responsible for the planning and operation of a safe, secure, reliable, economic and efficient electricity transmission system to ensure all reasonable demands for electricity are met. EirGrid is providing consumers with a high quality and increasingly clean energy supply, while also managing an increasingly complex supply and demand dynamic.

There are inherent challenges in all complex power systems. Electricity transmission system operators around the world face a wide range of demands and challenges, from geo-political pressures to the weather (including very cold spells and storms), to outages at power stations and on interconnectors. We utilise our deep technical expertise to deal with these, however, a confluence of these pressures at any one point can create an imbalance on the system which could, in rare cases, lead to localised loss of supply.

EirGrid does not generate electricity, deliver demand response or control market flows on interconnectors. As transmission system operator, we depend on others to have the power we need when we ask for it. These are the challenges that we manage every second of every day on behalf of communities and businesses across Ireland.

The All-Island Resource Adequacy Assessment published by EirGrid and SONI presents information on generation adequacy studies that assess the balance between supply and demand over the next ten years. This Winter Outlook presents a more detailed view, focusing on the upcoming winter. This document helps inform the electricity industry and supports preparation for the coming months. We study the expected generation capacity and the forecast demand to determine if there is adequate generation capacity margin. We identify periods where the margin between generation capacity and forecast peak demand is low, and the security of supply of the electricity system may be at risk.

The winter outlook for 2025/26 covers the period from 3 November 2025 to 5 April 2026. The data-freeze date for the outlook was 12 September 2025.



Key technical terms

Here we explain some of the key technical terms used in the report. A full glossary of other terms can be found in the following section.

Loss of Load Expectation (LOLE) is a mathematical formula, based on studies, of the number of hours in a period (typically a year¹) during which the available generation plant will be inadequate to meet the instantaneous demand. The higher this number is, the greater the risk that there will be insufficient generation available to meet the demand at all times.

Loss of Load Expectation (LOLE) Standard is set by the Department of Climate, Energy and the Environment (DCEE). The LOLE Standard acts as a maximum level of risk that DCEE has judged the system should be operated at. The LOLE standard is 3 hours per year.

Expected Unserved Energy (EUE) is the expected amount of energy, based on the same LOLE studies, not supplied during a period (typically a year) due to insufficient generation being available.

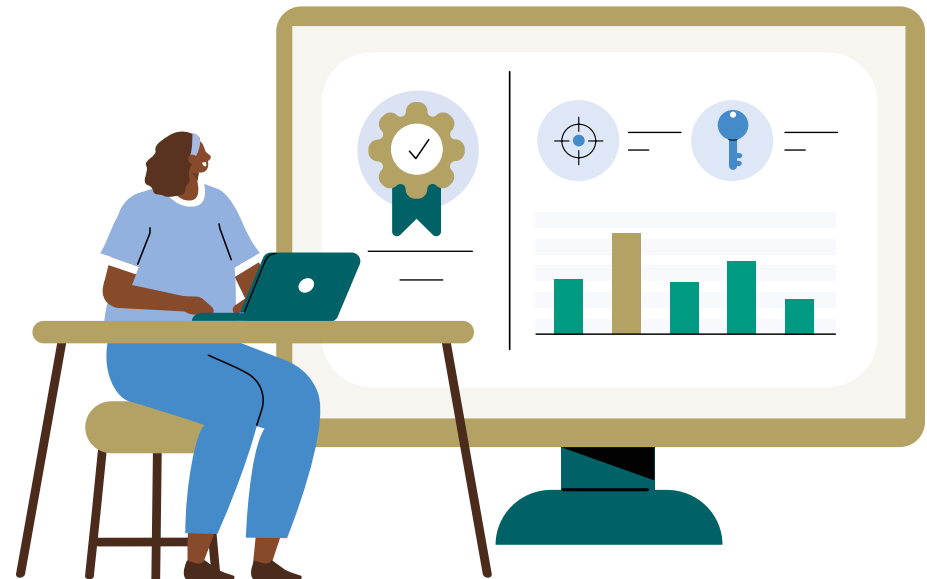
Alert State is when a single event on the electricity power system would give rise to a reasonable possibility of one or more operational security limits being violated, e.g., failure to meet the demand.

Emergency State is when one or more operational security limits on the electricity power system are violated, e.g., failure to meet the demand.

¹ For Winter Outlook 2025/26 LOLE is assessed over the period 3 November 2025 to 5 April 2026

De-rated generation capacity is the capacity of generation that can be expected to contribute to capacity adequacy. It is typically based on the historical performance of each generator on the system. A generator that has performed poorly in the past, by being unavailable for extended periods due to breakdowns, will have a lower de-rated capacity, as its contribution to capacity adequacy is deemed to be less.

De-rated margin is the sum of the de-rated generation capacity from all available generating units and interconnectors, less the forecast demand and reserve requirement.



Glossary

All-Island Resource Adequacy Assessment

The All-Island Resource Adequacy Assessment published by EirGrid and SONI presents information on generation adequacy studies that assess the balance between supply and demand over the next ten years.

Capacity

The rated continuous power output of a generator.

Capacity/generation adequacy

When there is sufficient generation capacity to meet the demand and reserve requirements.

Capacity market auction

The Capacity Market is a mechanism designed to ensure that Ireland and Northern Ireland have enough electricity to power homes, businesses and industry. The market takes the form of an auction, held every year, for capacity for the future.

Combined Cycle Gas Turbine (CCGT)

A type of thermal generator that typically uses natural gas as a fuel source. It is a collection of gas and steam turbines; where waste heat from the gas turbine(s) is passed through a heat recovery boiler to generate steam for the steam turbine(s).

Conventional generating unit

The general term applied to generating units that produce electricity from coal, oil or natural gas.

Demand

The amount of electrical power consumed by the power system.

Demand Side Unit (DSU)

A unit consisting of one or more individual demand sites that can be dispatched by the TSO to reduce demand.

De-rating factor

The percentage of a generating unit's capacity that reliably contributes to capacity adequacy. It is typically based on forced outage rates.

Dispatchable generating unit/generation

Sources of electricity that can be used on demand and dispatched at the request of the TSOs. Does not include wind and solar generation which are non-dispatchable generation.

East West Interconnector (EWIC)

A 500 MW Interconnector that connects the electricity transmission systems of Ireland and Great Britain.

Forced outage

An event where a generator is unavailable for electricity production for a period of time due to unforeseen/ unplanned reasons.

Forced outage rate

The proportion of time that a generation unit is expected to be unavailable for electricity production due to unforeseen/ unplanned outages.

Forecast demand

The amount of electrical power that is expected to be consumed by the power system in a time period.

Forecast peak demand

The maximum amount of electricity that is forecast to be consumed by the power system on a daily, weekly or annual basis.

Generating unit

Any apparatus which produces electrical energy.

Greenlink Interconnector

A 500 MW Interconnector that connects the electricity transmission systems of Ireland and Great Britain.

Interconnector

An electrical link that connects two systems.

Megawatt (MW)

Unit of power; 1 Megawatt = 1,000,000 Watts.

North-South Tie Lines

The electrical link that connects the transmission system of Ireland to the transmission system of Northern Ireland.

Outage

A partial or total reduction in the availability of a generating unit such that the generating unit is unavailable to achieve its maximum capacity.

Peaker plant

A dispatchable generating unit that is typically used to meet evening peak demand.

Renewable

A natural resource or source of energy, such as wind, solar and hydro.

Reserve requirement

The additional generation capacity that is required to be available to meet demand in the event that the forecasted supply of power is disrupted.

Retained Existing Units (REU)

Retained Existing Units (Moneypoint MP1, MP2, and MP3) provide Security of Supply services under Direction issued to EirGrid by the CRU on 18 July 2023. This Direction is in accordance with Article 16 of Regulation (EU) 2019/941, as outlined in the Information Paper - Regulatory Approach to Maintaining Local Security of Supply in Electricity (CRU17346). These units will only be dispatched when it is evident that market-based measures alone are not sufficient to prevent a further deterioration of the electricity supply.

Scheduled outage

Outage where a generator is unavailable for electricity production due to planned reasons, e.g., for maintenance.

Security of supply

The electricity system's capability to ensure uninterrupted availability of electricity at a reasonable cost.

System constraints

Congestion at one or more parts of the transmission network that prevent power being transmitted to the location of demand.

Security of Supply Programme

A programme of work published by CRU (<https://www.cru.ie/publications/28016/>) to increase generation capacity to provide additional stability and resilience to the Irish energy system. The programme of work was in response to EirGrid's identification of a potential capacity shortfall, if no action was taken, from 2021 to 2026.

Temporary emergency generation (TEG)

Temporary generation procured and operated by EirGrid under the Risk Preparedness Plan for Ireland, published by CRU. In accordance with Regulation (EU) 2019/2019, this generation will only be dispatched when the system would otherwise be in Alert or Emergency State, and where it is evident that market-based measures alone are not sufficient to prevent a further deterioration of the electricity supply situation.

Thermal generating unit

Generating units that produce electricity from coal, oil or natural gas, using steam to power a turbine(s).



Executive Summary

The Loss of Load Expectation (LOLE) in Ireland for the five months of the winter period being studied is 1.1 hours. The LOLE has reduced from 3.6 hours last winter and 21 hours the previous winter. It is inside the 3 hours per year standard.



This means the system will operate within the level of risk that is set by the Department of Climate, Energy and the Environment. The system may enter the Alert State at times, most likely at periods of low wind and low interconnector imports. There is a low probability of the system entering the Emergency State, due to insufficient generation being available to meet the demand.

The Expected Unserved Energy (EUE) figure would suggest that, on average, electricity consumers could potentially be without supply for less than 5 minutes over the winter period. However, emergency protocols are in place with large energy users that would mitigate the impact on homes and businesses, where sufficient notice of an event can be provided (minimum of 1 hour). LOLE and EUE are metrics used to measure the risk or likelihood of such an event happening. This does not necessarily mean that electricity consumers will be without supply for any period. Based on information at the time of the data freeze, November and March are expected to be the most onerous periods from a capacity margin perspective.

There is no risk of a system-wide “blackout” (a total loss of control of the electricity system) solely due to insufficient generation under any circumstances this winter. Other conditions would have to be present or multiple and significant failures occur to cause a system wide blackout. A key assumption underpinning the winter outlook analysis, based on best information available at the time of writing, is that there will be uninterrupted reserves of natural gas from both the Moffat terminal and the Corrib gas field, with no shortage issues.

Winter 2024/25 Review

Generation adequacy remained tight in Ireland across the winter period at times of low wind generation. There were strong market-driven imports into the island of Ireland from Great Britain throughout the period over the HVDC interconnectors. Temporary Emergency Generation (TEG), though not run, supported the system averting three System Alerts that would otherwise have occurred.

There were two cold spells during Winter 2024/25; one in the second half of November and a longer one at the start of January, both yielding system demand records. The peak demand record of 6,024 MW (5,913 MW temperature-corrected) was recorded on 08/01/2025 at 17:47. This was above our median demand forecast of 5,834 MW.

The forced outage rate of dispatchable generation (excluding DSUs) over the winter period was 14.7%. This was more than our assumption of 13.4%.

Wind generation output over the winter period was consistent with recent winters, supplying 41% of the electricity demand. However, wind generation output varied from 0 MW to 3,884 MW over the period. In terms of wind generation's contribution to capacity adequacy, we apply a capacity credit to account for the variability of its output.

During the ten periods with the tightest generation margin, the average import from Northern Ireland was 126 MW on the North-South Tie Lines and 629 MW from Great Britain on the East West and Greenlink Interconnectors².

² Greenlink Interconnector became operational on 29 January 2025

There were two System Alerts issued over the winter period. These were issued due to weather warnings and were not adequacy related:

- Storm Darragh - from 06/12/2025 at 21:00 to 07/12/2025 at 10:00
- Storm Éowyn - from 24/01/2025 at 00:00 to 24/01/2025 at 16:10



Winter Outlook

Demand

As can be seen in Figure 1, the transmission peak electricity demand in Ireland has been on an upward trend over the last number of years. Last winter a record peak demand of 6,024 MW (not temperature corrected) was recorded on 8 January 2025 at 17:47.

The analysis of Ireland’s peak demand over winter indicates that a 1°C decrease in outside temperature results in a 55 MW increase in peak demand, meaning electricity demand in the winter is heavily influenced by weather conditions.

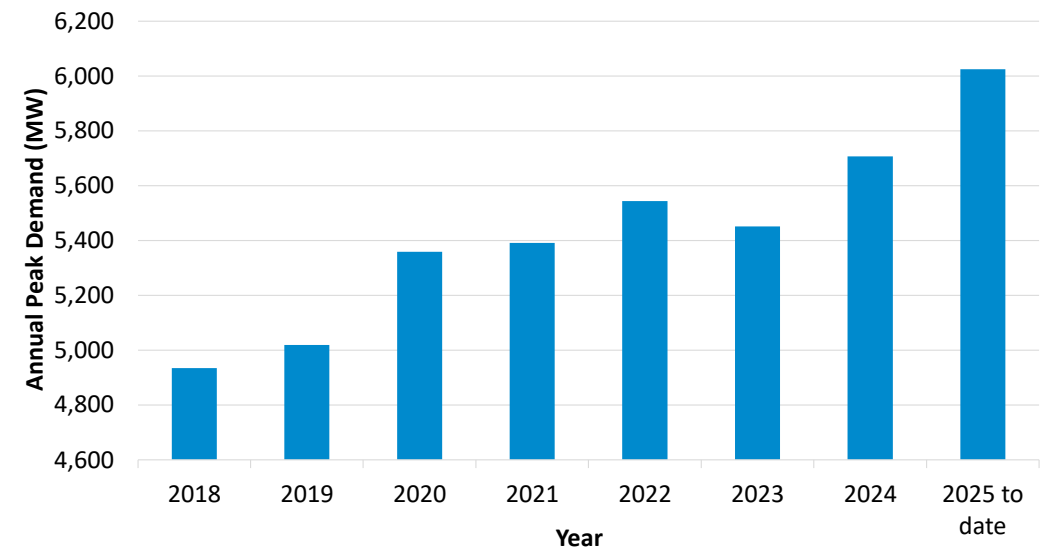


Figure 1: Ireland historical annual peak demand

For Winter Outlook 2025/26, our median forecast peak demand is 6,044 MW. Figure 2 compares the weekly peak demand, including temperature-corrected weekly peak demand, for the 2023/24 and 2024/25 winter periods to the median forecast weekly peak demand for the 2025/2026 winter period.

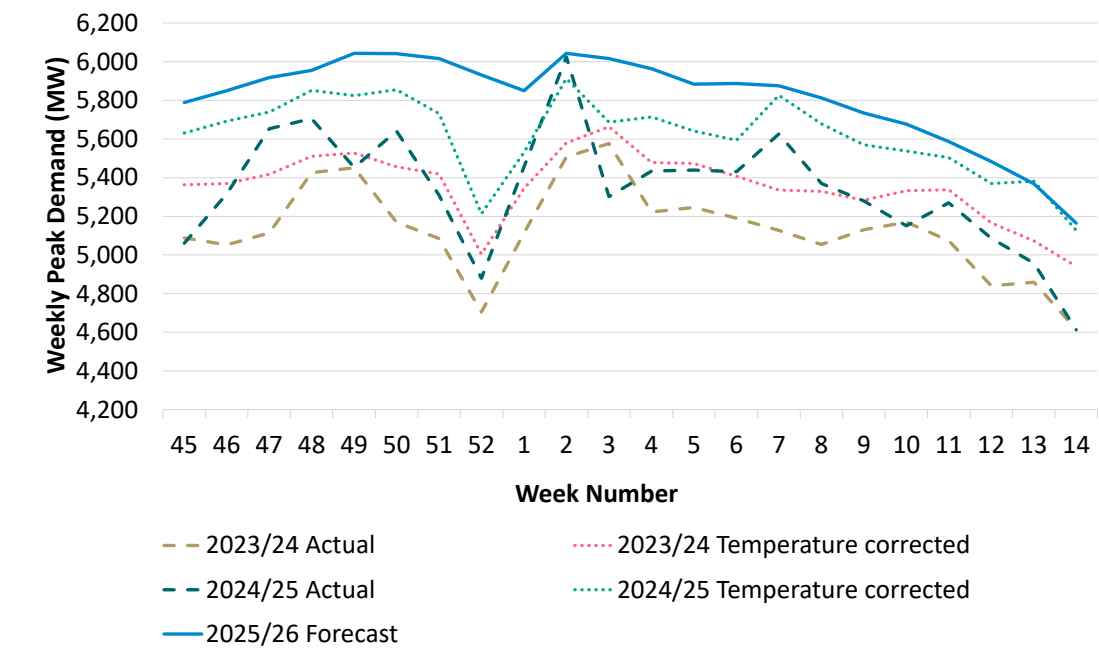


Figure 2: Ireland weekly peak demand for 2023/24 and 2024/25 winter periods median weekly peak demand for 2025/26 winter period



Generation capacity versus forecast demand

The total generation capacity in Ireland is made up of a variety of different types of generating units; combined cycle gas turbines (CCGTs) (gas), thermal generation plant (heavy fuel oil, biomass), peaker plant (gas, distillate and hydrotreated vegetable oil), renewables (mostly wind, solar and hydro), demand side units (DSUs), storage (pumped hydro and batteries), and a small volume of other technologies.

649 MW of Temporary Emergency Generation (TEG) and 750 MW of Retained Existing Units (REU), out of market generation secured as a result of measures taken under the Security of Supply Programme, are included in our analysis, as are 108 MW of new gas fired peaker plant and 45 MW of new batteries, delivered through the Capacity Market. In addition, an extra 110 MW of wind and solar generation is included.

Three interconnectors are considered for this Winter Outlook; the 500 MW East West Interconnector (EWIC), the 500 MW Greenlink Interconnector which became operational on 29 January 2025, and the North-South Tie Lines. EWIC and Greenlink connect Ireland to Great Britain and the North-South Tie Lines connect Ireland to Northern Ireland.

We apply derating factors to the generation capacity to reflect the contribution of each generator to capacity adequacy, to calculate a de-rated generation capacity. For conventional dispatchable generating units, the de-rating factor is typically based on forced outage rates in a rolling three-year period.

The de-rated margin is the sum of the de-rated generation capacity from all available generating units and interconnectors, less the forecast demand and the reserve requirement. The more positive the de-rated margin is, the greater the likelihood that we will have sufficient capacity to meet demand, while a negative de-rated margin indicates there may be a shortage of generation capacity.

Figure 3 shows the total generation capacity on the system, the de-rated generation capacity, and the forecast demand plus reserve for the day with the highest peak demand across the upcoming winter period.

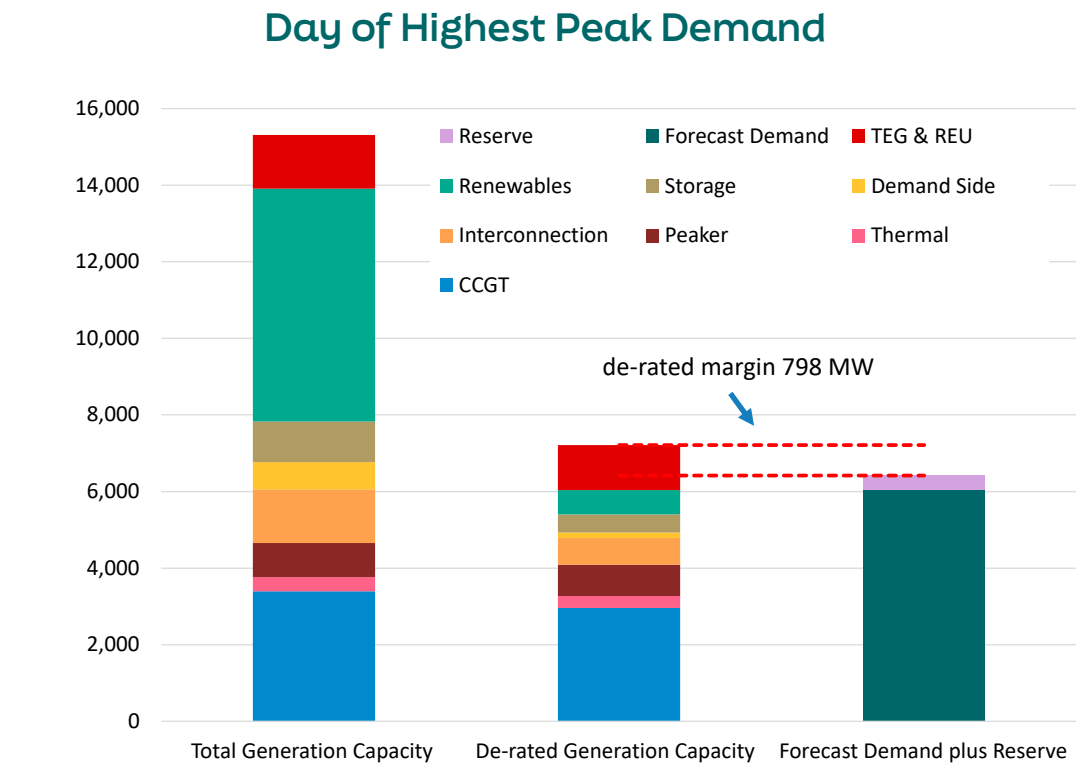


Figure 3: Ireland generation capacity versus forecast demand for the day of highest peak demand



LOLE and de-rated margin

The Loss of Load Expectation (LOLE) in Ireland for the five months of the winter period being studied is 1.1 hours. This is inside the 3 hours per year standard meaning the system will operate within the level of risk set by the Department of Climate, Energy and the Environment. If Temporary Emergency Generation (TEG) and Retained Existing Units (REU) are excluded the LOLE becomes 43.4 hours. The minimum de-rated margin over the winter period is expected to be in the range of 688 MW to 973 MW. If TEG and REU are excluded the minimum de-rated margin would be in the range -711 MW to -426 MW. The system may enter the Alert State at times, most likely at periods of low wind and low interconnector imports. There is a low probability of the system entering the Emergency State at times due to insufficient generation being available to meet the demand. The Expected Unserved Energy (EUE) figure would suggest that, on average, electricity consumers could potentially be without supply for less than 5 minutes over the winter period. However, emergency protocols are in place with large energy users that would mitigate the impact on homes and businesses, where sufficient notice of an event can be provided (minimum of 1 hour). LOLE and EUE are metrics used to measure the risk or likelihood of such an event happening. This does not necessarily mean that electricity consumers will be without supply for any period.

Table 1: Ireland key metrics for median demand level

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Loss of Load Expectation (LOLE)	1.1 hours
Expected Unserved Energy (EUE)	318 MWh
Minimum de-rated margin (MW)	798 MW
Minimum de-rated margin (%)	12.4%
Loss of Load Expectation (LOLE) excluding TEG and REU	43.4 hours
Expected Unserved Energy (EUE) excluding TEG and REU	15,133 MWh
Minimum de-rated margin (MW) excluding TEG and REU	-601 MW
Minimum de-rated margin (%) excluding TEG and REU	-9.4%

Figure 4 shows the de-rated margin as a percentage of demand plus reserve for the day with the highest peak demand across the winter period for three demand scenarios. An approximate figure for the de-rated margin associated with an LOLE of 3 hours per year is also shown.

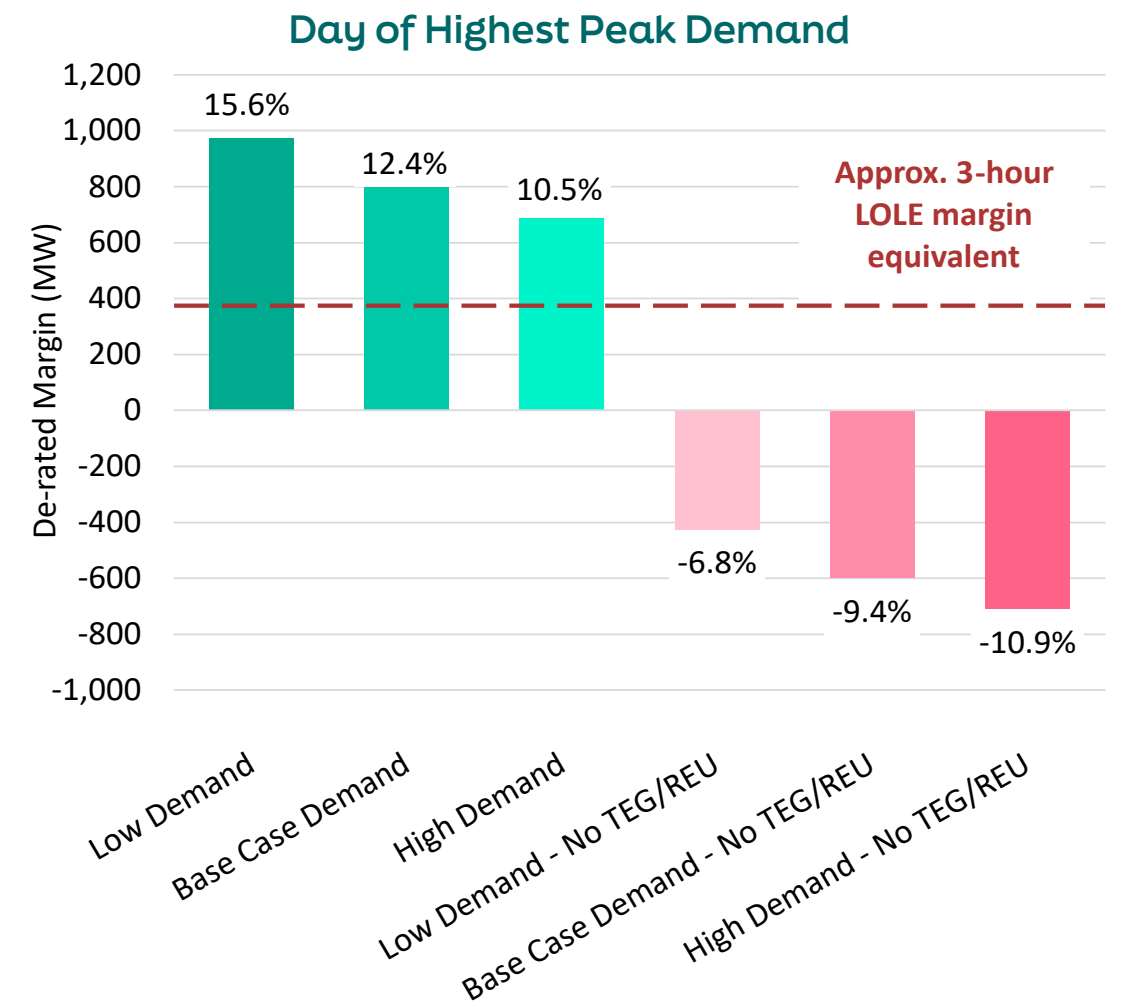


Figure 4: Ireland de-rated margin for low, median and high demand scenarios on day of highest peak demand

Weekly analysis

We study the expected de-rated generation capacity and the forecast demand for each week across the winter period. This allows us to identify weeks when the de-rated margin is low and when the system is at risk of entering the Alert State. We look at three interconnection (East West Interconnector, Greenlink Interconnector and North-South Tie Lines) import scenarios; zero (0 MW), medium (700 MW) and full (1,400 MW) imports. It should be noted that our studies also include probabilistic analysis of forced outages, which can have a more significant impact than outlined below.

Figure 5 shows the expected weekly de-rated generation capacity in the medium import scenario. The de-rated generation capacity remains broadly static throughout the winter period, as there are relatively few scheduled outages of generating units.

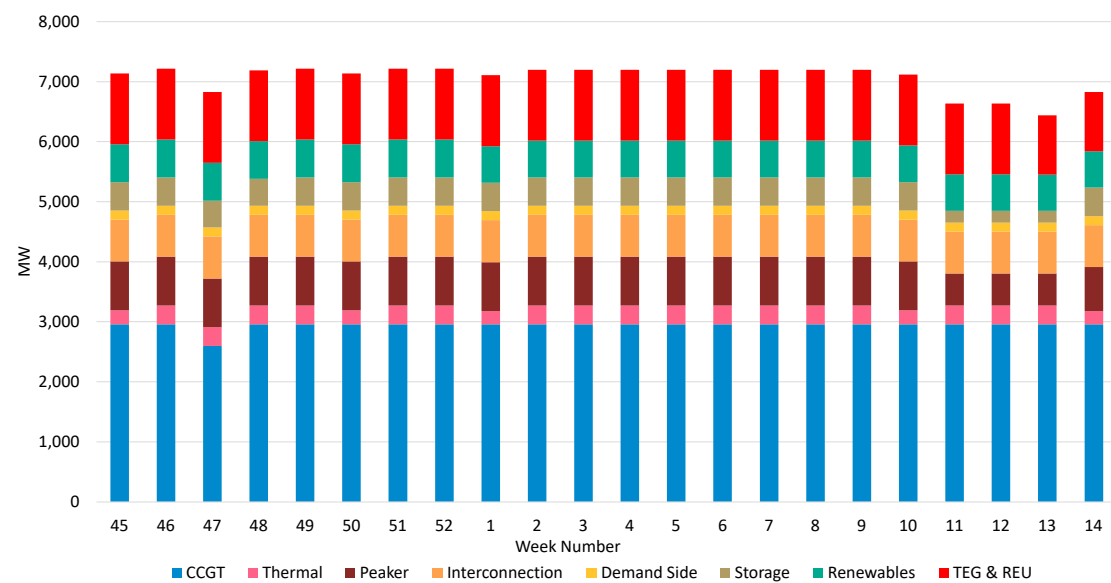


Figure 5: Ireland expected weekly de-rated generation capacity per type of generating unit

Figure 6 shows the expected weekly de-rated generation capacity for each import scenario versus the forecast demand plus reserve. In the medium import scenario, the de-rated capacity is greater than the demand plus reserve requirement in all weeks. The risk of the system entering the Alert State is higher in November and March.

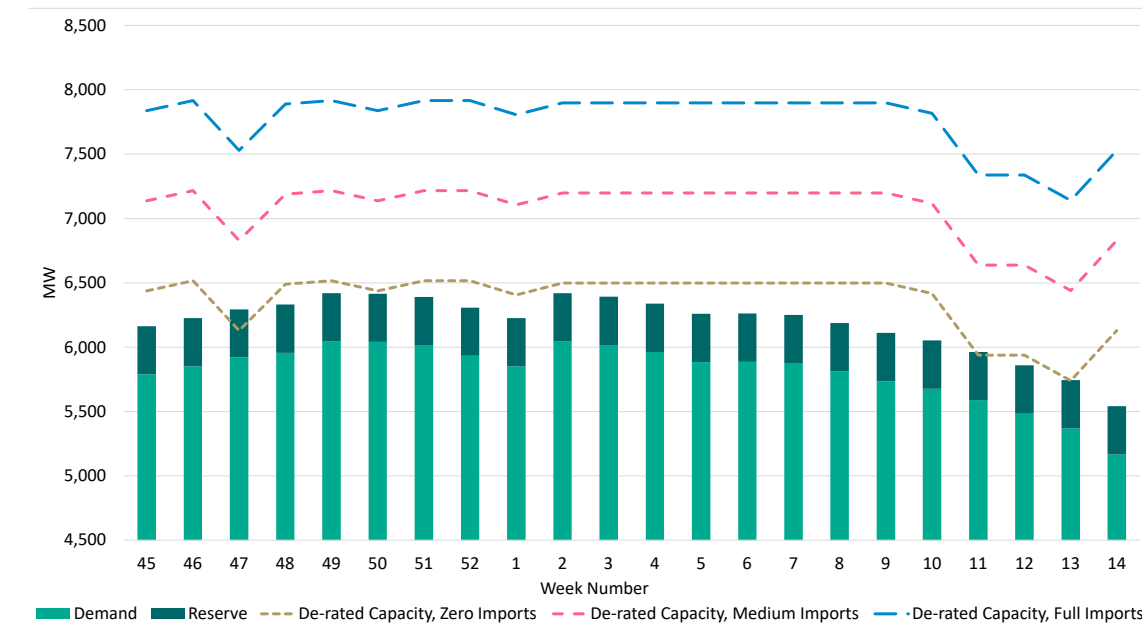


Figure 6: Ireland weekly de-rated generation capacity (dashed lines) for each import scenario versus the forecast demand plus reserve (bars)

Forced outage rates

The dispatchable generation (excluding DSUs) forced outage rate in Ireland has increased significantly over the last number of years. For January to June 2025, it stands at 18%. This has led to tight margins at times and has impacted the system's ability to accommodate generator and transmission planned outages.

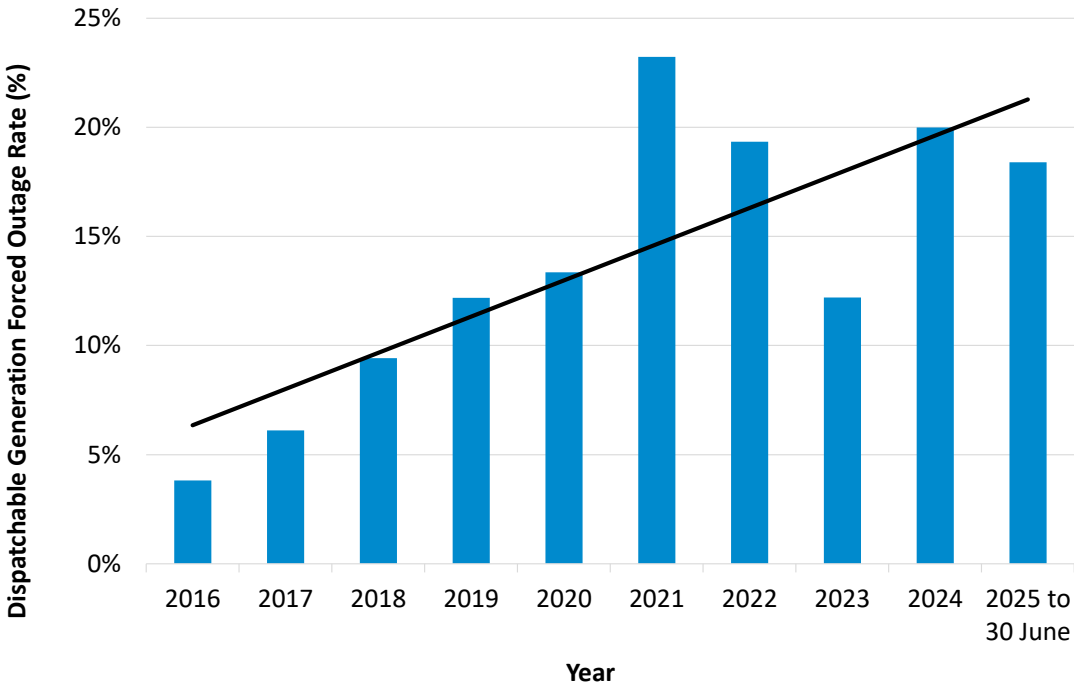


Figure 7: Ireland historical dispatchable generation annual forced outage rates



Assumptions

- ✓ There will be uninterrupted reserves of natural gas from both the Moffat terminal and the Corrib gas field, with no shortage issues.
- ✓ The All-Island Resource Adequacy Assessment methodology was used as a basis for studies with the following inputs and assumptions.
- ✓ De-rating factors/capacity credits:
 - CCGT, large thermal and hydro units (high- and mid-merit units) de-rating factors based on forced outage rates between July 2022 and June 2025 inclusive,
 - Peaker de-rating factor: 0.9,
 - New unit de-rating factor: 0.925,
 - DSU de-rating factors based on availability rates between July 2024 and June 2025 inclusive,
- ✓ 649 MW of Temporary Emergency Generation (TEG) operational.

- ✓ 750 MW of Retained Existing Units, i.e. Moneypoint units MP1, MP2 and MP3.
- ✓ A fully intact network will be available.
- ✓ Demand scenarios: low, median (base case) and high as per the All-Island Resource Adequacy Assessment (for diagrams only). Studies use median demand.
- ✓ Ireland interconnector scenarios (for diagrams only. Studies include model of Northern Ireland, Great Britain and France systems):

Table 2: Import scenario breakdown

	Zero Import (MW)	Medium Import (MW)	Full Import (MW)
East West Interconnector	0	300	500
Greenlink Interconnector	0	300	500
North-South Tie Lines	0	100	400
Total	0	700	1400







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