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# Winter Outlook 2022/23: Early view

Helping to inform the electricity industry and prepare for the winter ahead.

**nationalgrid**ESO

# Welcome

Welcome to our early view of winter 2022/23. The ESO usually publish the Winter Outlook Report in Autumn each year, which provides an outlook for the forthcoming Winter. This year we committed to providing an early view to help the electricity industry prepare for the Winter ahead. This early view is being created in addition to the full Winter Outlook Report, which will be published in the Autumn as usual. We hope this is helpful and welcome further engagement. For more information you can email us at [marketoutlook@nationalgrideso.com](mailto:marketoutlook@nationalgrideso.com); join us at the [ESO Operational Transparency Forum](#); or use social media via LinkedIn and Twitter.

This document includes an early view of the electricity security of supply outlook for winter. It sets out our Base Case view for winter as well as the actions we are taking to build our resilience to the risks and uncertainties arising from the invasion of Ukraine by Russia. It does not include the full detailed analysis that is usually included in the Winter Outlook Report. This will be developed over the coming weeks and months for publication in the autumn. We will continue to monitor the market outlook for winter, and it's likely that the information presented in the early view will change by the time we publish the Winter Outlook Report as we incorporate new market intelligence. Nonetheless, we hope that industry stakeholders will find our early view helpful and that it will allow them to prepare for winter.

This document only covers our early view of the electricity outlook for the winter ahead. An early view of the gas outlook can be found [here](#).



**Fintan Slye**

**Director, Electricity System Operator**

# Key messages / Early view of Winter 2022/23

## 1 Base Case: System margin

Margins are expected to be within the Reliability Standard under normal market conditions

## 2 Base Case: Operational margins

There may be some tight periods that we expect to be able to manage using our standard operational tools

## 3 Impact of European gas supply issues

We are taking actions to build our resilience to potential risks and uncertainties due to a possible shortage of gas supply in Europe. This includes extending the life of coal units and exploring market-based demand side response

# System margins / Base Case

Margins are expected to be within the Reliability Standard under normal market conditions. Our current Base Case margin is 4.0 GW / 6.7% with an associated loss of load expectation (LOLE) of 0.1 hours.

Our current assessment indicates that we expect system margins to be broadly in line with recent winters.

It shows that we expect there to be sufficient available capacity to meet demand, with a de-rated margin of 4.0 GW, equivalent to 6.7%. The associated LOLE of 0.1 hours is within the Reliability Standard of 3 hours LOLE.

The system margin calculation assumes that on the tightest days the price in Great Britain will be higher than in Europe causing interconnector flows into Great Britain in response to these market signals, which include scarcity prices, as they have done in previous winters.

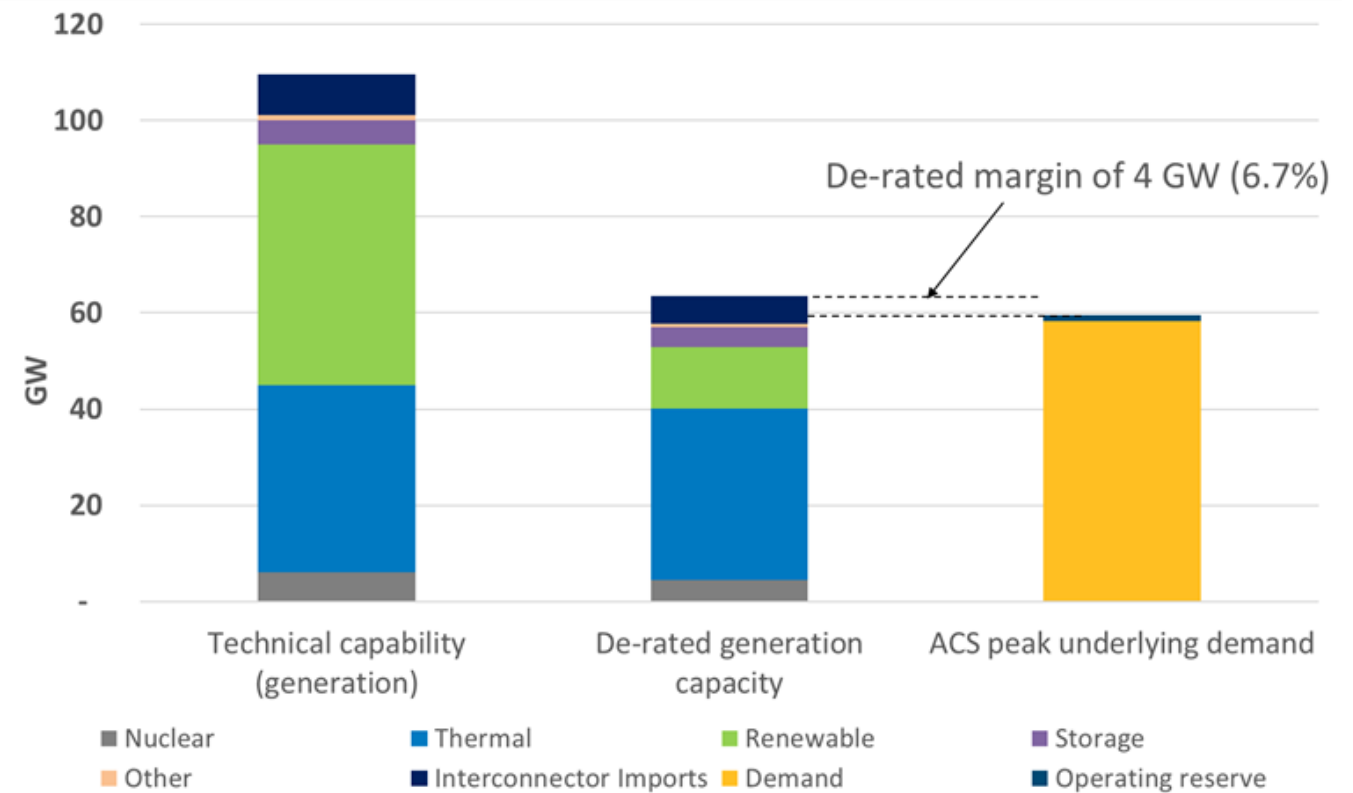


Figure 1. Capacity stack chart to illustrate margin vs peak demand

# Operational margins / Base Case

Operationally, we expect some tight periods that are most likely to occur in the first half of December. We may need to use our operational tools, such as issuing electricity margin notices (EMNs), to manage these periods. We expect there to be sufficient available capacity to respond to meet consumer demand.

Figure 2 shows the daily operational margin under typical conditions, together with a credible band within which the margin can fluctuate because of variation in factors such as wind generation, weather and plant outages.

When the shaded region dips below 0 GW, there is a risk that the system may become tight, and operational tools, including market notices, could be used to increase margin.

Our operational modelling indicates that there could be some tight periods this winter, which are most likely to occur in the first half of December.

We may need to use our standard operational tools to manage these periods should they occur which, for example, may mean issuing EMNs.

We expect there to be sufficient available capacity to respond to these market signals to meet consumer demand.

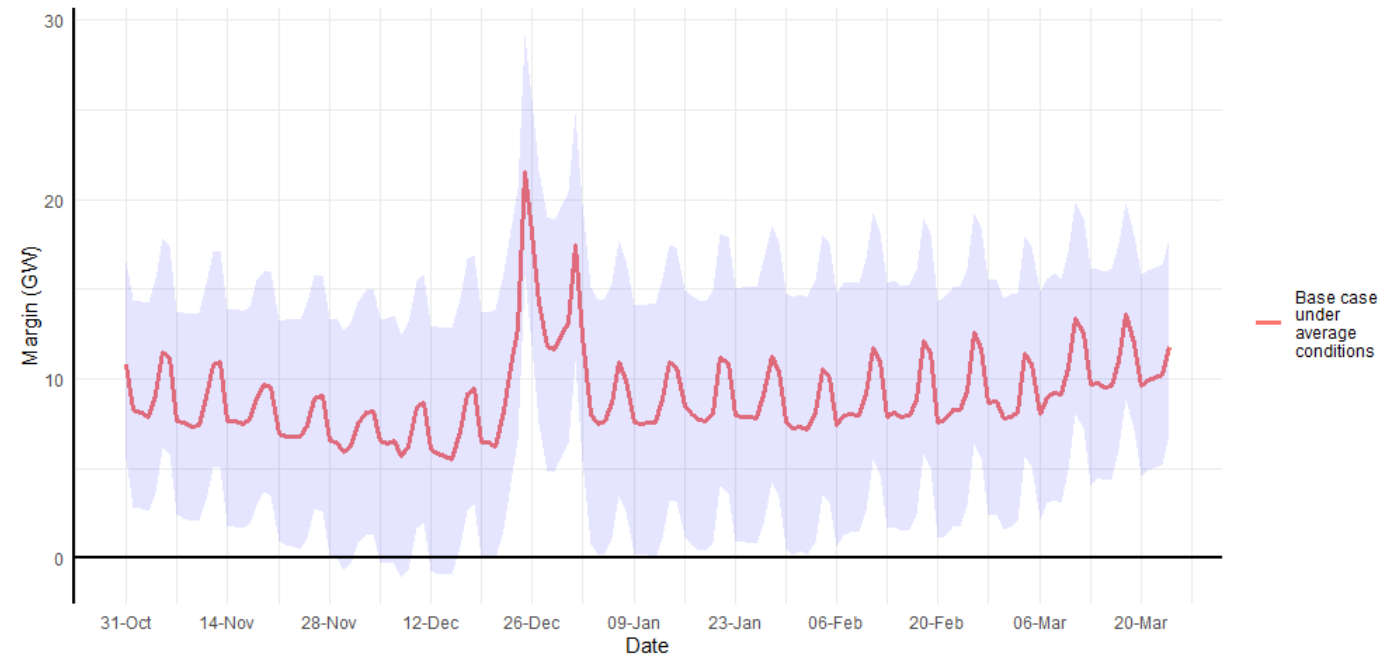


Figure 2. Central forecast with range of outcomes for daily margin during Winter 2022/23 using our Base Case assumptions

# Preparing for winter / European Gas Supply

There are risks and uncertainties this winter as a direct result of possible shortfalls in Europe's gas supply. As noted elsewhere, while Britain is not reliant on Russian gas to the extent that the rest of Europe is, it is clear that the cessation of flows of gas into Europe could have knock-on impacts, including very high prices. As a prudent system operator, we are working closely with BEIS, Ofgem and National Grid Gas Transmission to assess the potential scenarios that may arise, and taking steps to ensure we are well prepared to maintain safe and secure operation of the electricity system. These steps include actions to build our resilience and mitigate the potential impact to electricity customers in Great Britain.

## 1 Delaying coal plant closures

As has been widely reported, the ESO have been working with BEIS to delay the closure of five coal units. This would deliver around 2 GW de-rated capacity. Four of the five units have now confirmed their availability. We will provide further information when all discussions are concluded. As these units will not be available in the market, they have not been included in our Base Case margin assumptions and are therefore additional.

## 2 Greater demand side response

Building on work we have done for several years, we are exploring options to incentivise greater participation of demand side response from electricity customers.

## 3 Network outages

We are working closely with Transmission Owners to minimise the impact of network outages this winter. By optimising the outage plan we maximise the amount of energy available to consumers. We do this by:

- Aligning network outages in a way that minimises constraints.
- Obtaining enhanced equipment ratings.
- Agreeing enhanced post fault actions.
- Reducing emergency return to service times for outages

## 4 Industry engagement

We are engaging with industry stakeholders to ensure we mitigate any emerging risks as they materialise. This includes, for instance, discussions with:

- Generators
- Neighbouring European Transmission System Operators on developments that could affect electricity interconnectors;
- Electricity Market Reform Delivery Partners on enhancing delivery assurance in the GB Capacity Market.

# Appendix / System and Operational Margins assumptions and methods

## System Margins

Our Base Case assumes normal market conditions. This means that we assume there is no disruption to fuel supplies for thermal power stations and that electricity interconnectors between Great Britain and Europe continue to operate in response to market signals, including scarcity prices, as they have done in previous winters.

### Demand

We have assumed an average cold spell (ACS) total GB peak demand of 59.5 GW. This represents the total demand met by generation on the transmission and distribution systems. It includes 1.2 GW operational reserve.

### Supply

Our current Base Case margin does not include the coal units that we either have contracted or expect to contract for this winter. These units are, therefore, additional.

Based on public announcements, we have assumed that Baglan Bay, Severn Power and Sutton Bridge CCGTs all remain unavailable. We assume all generating technologies are de-rated in line with the most recent Capacity Market de-rating factors, with the exception of nuclear and coal. We assume the availability of these technologies is slightly lower, in line with their average availability over the last three winters.

### Interconnectors

We assume that interconnectors are able to provide 5.7 GW net imports at times when GB needs it. This is consistent with their Capacity Market obligations. Our Base Case assumes 2.7 GW additional interconnector capacity that was not available last winter. This includes Eleclink which is now operational, and both IFA and NSL operating at full capacity.

There is uncertainty on the availability of the French nuclear fleet for winter. This could lead to more export flows from Great Britain to France when our system margins are not tight. We are continuing to monitor the outlook in France and will undertake further assessments ahead of the Winter Outlook Report in the autumn.

## Operational Margins

While the de-rated margin indicates the capability of available supply in the market to meet winter peak demand, we need to consider a much greater level of detail to assess the range of conditions we may expect to encounter as we operate the system in real-time.

We use our operational modelling to assess this. Operational margin measures the excess generation available over the demand and reserve requirements needed for safe operation of the transmission system.

We consider both a central forecast – based on average weather and typical plant availability and wind generation – along with a range of possible effects from weather, wind and plant variability to assess the potential range of operational margin that we might expect on each day during winter. This is done by simulating a very large number of possible combinations of weather, wind and unplanned generation outages.

We base this on our latest view of daily peak demand and the latest view of plant outages from REMIT. It does not currently include coal units that were due to close ahead of this winter. In our operational modelling, we assume that electricity interconnectors export 750 MW to Ireland and that electricity interconnectors with the rest of Europe would respond to price signals, providing imports when we need them.

As in our Base Case for System margin, this assessment is made under the assumption of normal market conditions, where electricity interconnectors operate in response to market prices, including scarcity prices, and there is no disruption to fuel supplies for thermal power stations.