

Winter Outlook 2024/25: Early View

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

June 2024

Welcome



Kayte O'Neill
Chief Operating Officer
Electricity System Operator

Welcome to our early view of winter. This report contains our initial assessment of the electricity security of supply outlook for winter 2024/25. We hope that early visibility of our developing analysis is helpful to industry stakeholders, and that it will support effective preparation for the period.

A full *Winter Outlook Report*, including more detailed analysis, will be available in the autumn, with further updates provided at the Operational Transparency Forum (OTF). As in previous years, we will coordinate our *Winter Outlook Report* with *National Gas Transmission's Gas Winter Outlook*.

It is possible that the information presented in the early view could change by the time we publish the *Winter Outlook Report*.

In addition to our Base Case view, this report contains an early assessment of the operational surplus under a central view, and the operational surplus allowing for natural variations in demand, wind generation and outages to highlight when tighter periods are mostly likely to occur.

Global energy markets are showing signs of stability, but uncertainties remain. We continue to monitor market conditions and emerging risks, working closely with Government, Ofgem and National Gas Transmission.

We welcome input from stakeholders on the outlook for winter, including perspectives on market conditions.

Alongside our Early View of Winter 2024/25, we have also published our 2023/24 *Winter Review and Consultation* on our [Winter Outlook](#) webpage.

We want to make sure that our publications continue to improve and that they contain the right information to support industry planning. To provide feedback, you can email us at: marketoutlook@nationalgrideso.com, join us at our [ESO Operational Transparency Forum](#); or use social media via **LinkedIn or on X (previously Twitter) @NationalGridESO**.



Table of Contents

1. Key Messages →	4
2. System Margins (Base Case) →	5
3. Operational Surplus (Base Case) →	6-7
4. Energy Markets →	8



1. Key Messages

Early View of Winter 2024/25

1. Margins

Our analysis shows that margins are expected to be adequate and within the Reliability Standard.

Our current Base Case margin is 5.6 GW / 9.4% with an associated loss of load expectation (LOLE) below 0.1 hours. This is higher than the 4.4 GW (7.4%) published in the *Winter Outlook Report* for 2023/24.

We expect there to be sufficient operational surplus in our Base Case throughout winter. There may be some tight days where we need to use our standard operational tools, including the use of system notices.

2. Markets

Global energy markets show signs of finding a new equilibrium, but uncertainties remain. We will continue to monitor risks and take necessary steps to build resilience.

Rebalancing in European energy markets has further reduced the risk of fuel shortages for gas generation in Great Britain and increased the resilience of interconnector imports to supply-side shocks.

Whilst energy markets show signs of stability, uncertainties remain. As a prudent system operator, we remain vigilant, continuing to monitor potential risks and working closely with Government, Ofgem and National Gas Transmission to establish any actions necessary to build resilience.

We will continue close and active engagement with our neighbouring transmission system operators, identifying developments that could impact interconnector flows. We will coordinate reciprocal support to maintain secure supplies for customers in Great Britain and Europe.

3. Developing Capacity

We will continue to meet the challenge of reliably operating a changing electricity system as new technologies, and diverse forms of capacity, contribute to security of supply.

Our Demand Flexibility Service (DFS), introduced as an enhanced action to mitigate against risks and uncertainties over recent winters, demonstrated that demand flexibility can be provided at a national scale. We are engaging with industry stakeholders to consider how the service could evolve and will be publishing more information in the coming days.



2. System Margins (Base Case)

Margins are expected to be within the Reliability Standard. Our current Base Case margin is 5.6 GW / 9.4% with an associated loss of load expectation (LOLE) below 0.1 hours.

Our current assessment shows that we expect there to be sufficient available capacity to meet demand in our Base Case, with a de-rated margin of 5.6 GW / 9.4%.

The associated LOLE is below 0.1 hours, which is within the Reliability Standard of 3 hours. We assume peak average cold spell demand of 59.8 GW (including operating reserve). Our assessment assumes all providers with Capacity Market (CM) agreements deliver in line with their obligations unless we have specific market intelligence otherwise.

Available generation assumes an additional 1 GW (de-rated) of new capacity connected to the transmission system and a 0.7 GW (de-rated) increase in the contribution from generation connected at distribution level. We assume that 6.6 GW (de-rated) net imports will be available via interconnectors at times of tighter margin, which is in line with CM agreements held by interconnectors.

Should it be required, the ESO can trade on the interconnectors to secure the flows required to meet peak demands. This is an important operational tool available to support security of supply. While the Base Case margin is improved from last winter, we are continuing to monitor risks and uncertainties for winter and, if necessary, will take steps to build resilience.

Table 1: Base case de-rated margin for recent winters

Winter	De-rated margin (early view)	De-rated margin (winter outlook)
2022/23	4.0 GW (6.7%)	3.7 GW (6.3%)
2023/24	4.8 GW (8%)	4.4 GW (7.4%)
2024/25	5.6 GW (9.4%)	–

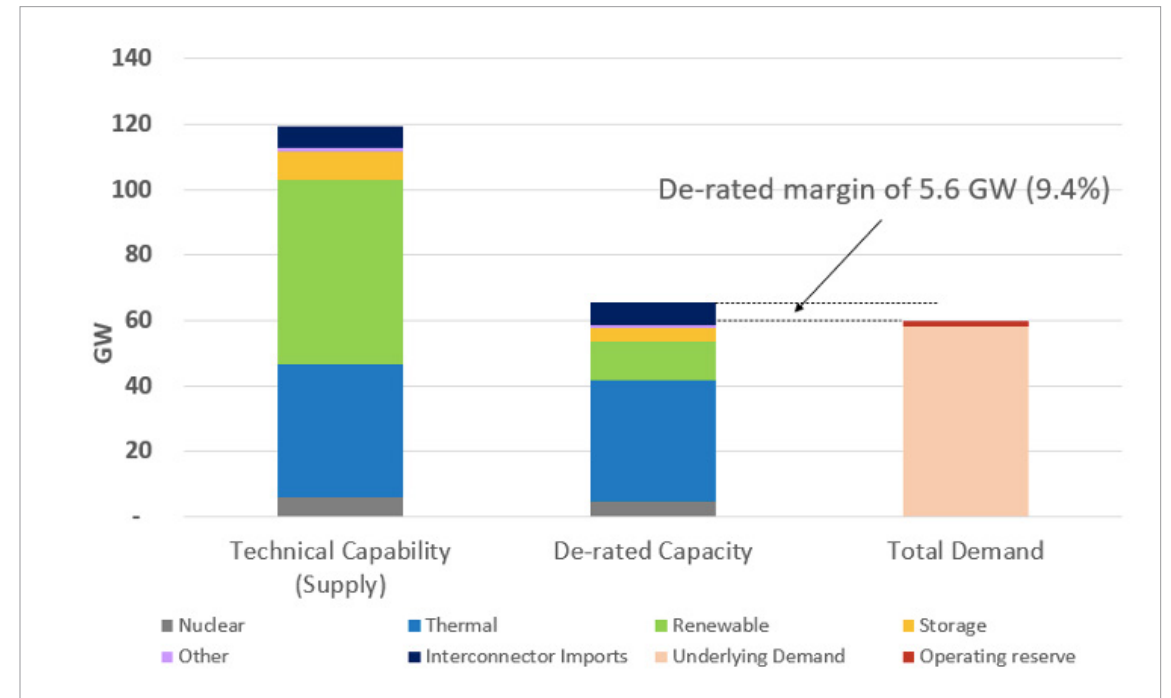


Figure 1: Supply margin in relation to generation capacity and demand.

3. Operational Surplus (Base Case)

Our Base Case operational view shows sufficient operational surplus for each week of winter. There may be occasions when we can support exports at peak times, providing reciprocal support to neighbouring markets if needed.

Figure 2 shows the day-by-day view of operational surplus (also referred to as margin). Our operational modelling includes notified plant outages and average weather conditions. Generation is de-rated through a breakdown rate to reflect the potential for unplanned outages.

Under our Central Case, we assume wind at its Equivalent Firm Capacity (EFC), which for transmission-connected wind is approximately 3 GW. Our assessment is based on transmission demand and generation, and therefore represents the perspective from our control room based on what the market is currently intending to provide (i.e. before use of our operational tools and excluding transmission constraints).

Our operational modelling helps to identify when tight periods are most likely to occur, and to indicate when we may need to use our operational tools to manage margins. This view will change throughout winter, based on weather and changes to plant outages.

This winter we expect normalised peak transmission demand to occur in early to mid-January, based on our latest forecasts, and this demand can be met in the Base Case before using any operational tools. The minimum operational surplus is currently projected to occur in late November when these forecasts are combined with current generator submissions.

Figure 2 shows a particular view of generation and demand from which you can extract a single view of operational surplus. However, a single view is not sufficient for assessing the potential risk due to natural variation in demand, wind and outages. Figure 3 (on page 7) shows the daily operational margin under typical conditions, together with a credible band within which the margin can fluctuate due to these factors.

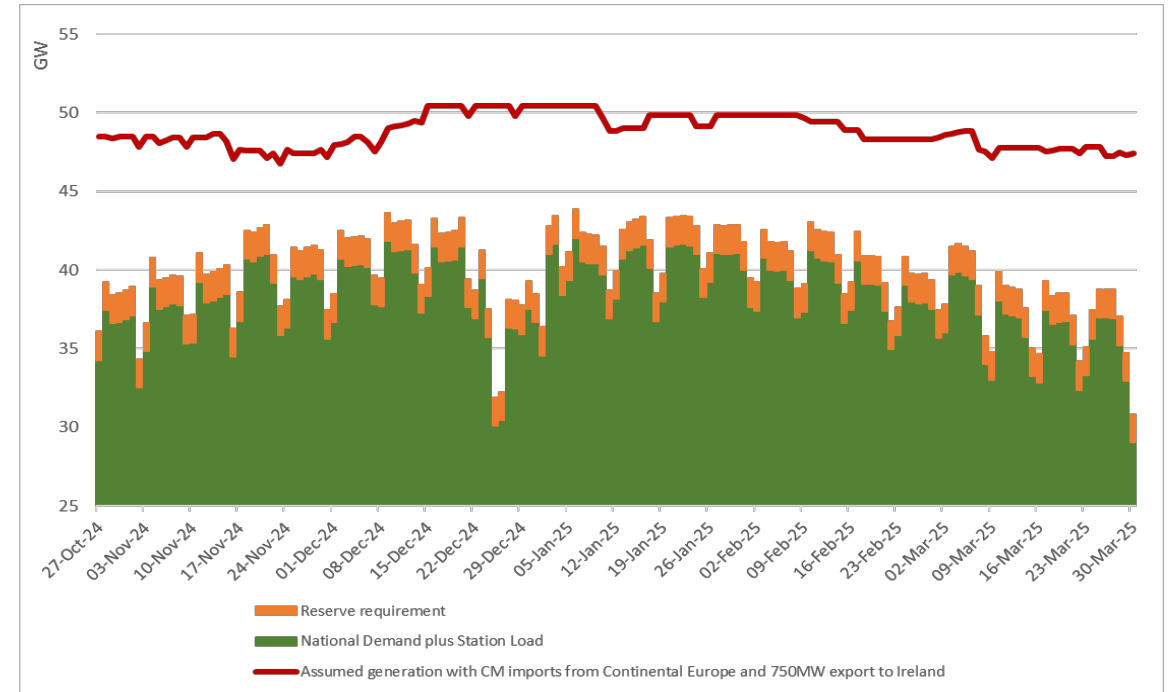


Figure 2: Day-by-day forecast view of operational surplus for winter 2024/25 under a Central Case.

Operational Surplus (Base Case) Cont.

We expect to have sufficient operational surplus throughout winter in our Base Case, even when we consider the expected natural variation of demand, wind and outages. There may be some tight days, and based on the current available information, these are most likely to be in late November, early December and late January.

Figure 3 shows a central forecast and range of credible outcomes for daily margin for winter. To derive these credible outcomes, we assess the daily surplus under typical conditions, using average weather conditions for demand and wind generation, and average availability for conventional generation. We then simulate 30,000 variations around this central view using multiple scenarios for weather, demand, conventional generation availability, wind generation output and interconnector availability. For each of these scenarios we calculate the daily surplus time series across the entire winter, providing us with a credible range for the operational surplus.

When the shaded region nears 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 sufficient operational surplus throughout winter in our Base Case, even when we consider the expected natural variation of demand, wind and outages. There could still be days where the operational surplus falls below this range (up to 5% of days) and we may need to use our standard operational tools to manage these periods, which may mean issuing Market Notices*.

We expect there to be sufficient available capacity to respond to these market signals to meet consumer demand. The outturn surplus will ultimately be determined by market positions, which could lead to us providing exports to Europe at peak times.

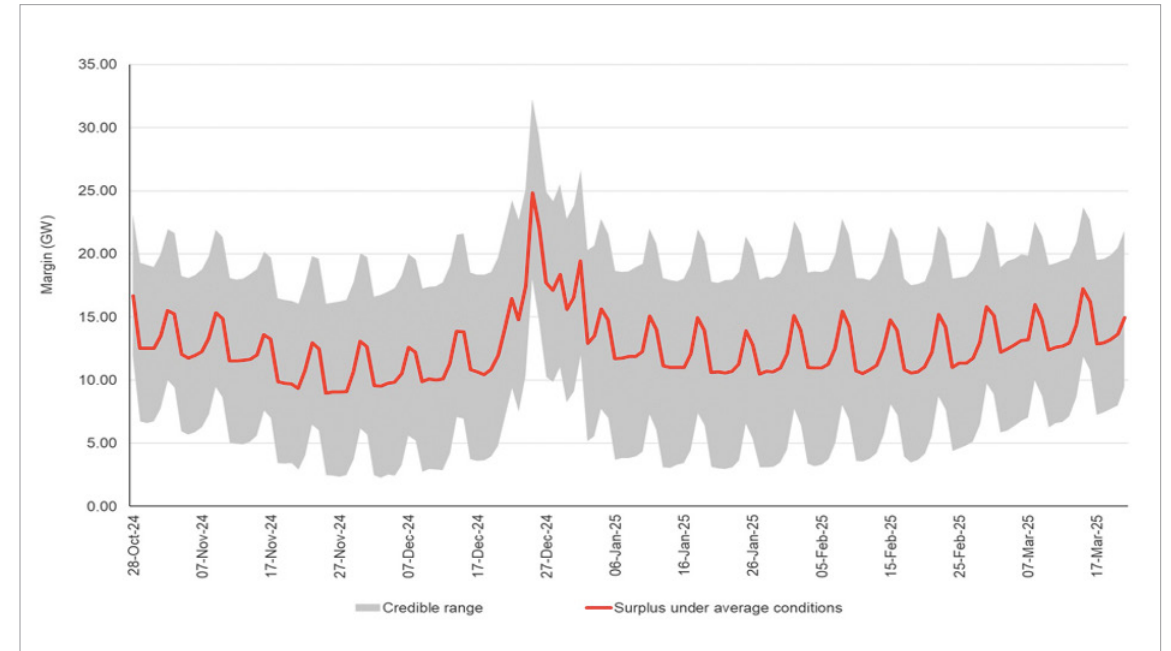


Figure 3: Central forecast with a range of credible outcomes for daily margin during winter 2024/25 using our Base Case assumptions.

* Including Electricity Margin Notices (EMNs) and Capacity Market Notices (CMNs)

4. Energy Markets

Early View of Winter 2024/25

Energy markets are showing signs of finding a new equilibrium due to structural changes in supply, although we remain vigilant of risks and will continue to monitor market developments.

The supply side picture in Great Britain has improved, driving our current Base Case margin to increase by 1.2 GW to 5.6 GW for this winter. The year-on-year change is due to increased interconnector capacity, new gas generation, growth in battery storage capacity and the effects of increased generation connected to the distribution networks. The changes more than offset plant retirements during the year.

The T-1 Capacity Market auction for delivery in winter 2024/25 secured 7.6 GW of capacity across a range of technologies. We continue to develop tools, systems and services that provide clear and efficient routes for new technologies and all forms of capacity to contribute to the security of supply.

A range of energy market developments also improve our outlook regarding security of supply. Increased regasification capacity in key European markets, from 263 bcm/y in October 2022 to 325 bcm/y in May 2024, has diversified the entry points for natural gas, increasing the resilience of the whole energy system to supply-side shocks. Aided by a mild winter, European gas storage entered injection season at all-time highs and is expected to comfortably meet the filling trajectory required to achieve the 90% target by 1 November.

Early indicators suggest healthy generation availability in interconnected power markets. In particular, French nuclear plant availability is scheduled to be healthy compared to previous years. These and other market developments have caused power prices to stabilise since the start of 2024, while overall price volatility has also dropped.

We continue to monitor energy market conditions and prepare for a wide range of eventualities. Should risks arise, we will take action to build resilience and minimise any potential impacts.

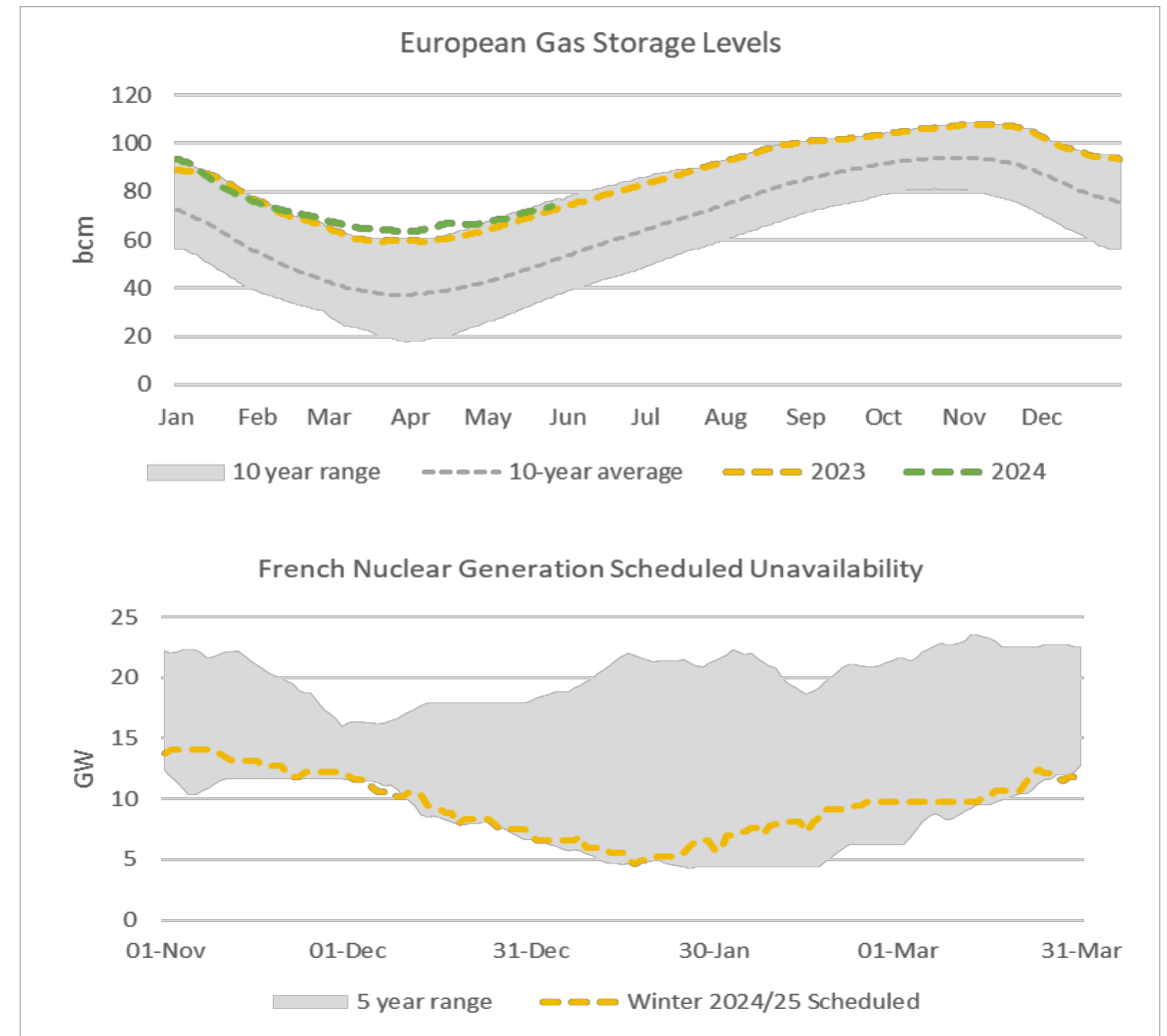


Figure 4: Charts showing some of the current key market drivers, including healthy European gas storage levels and lower than average French nuclear scheduled unavailability over winter*.

* Data sourced from Gas Infrastructure Europe and EDF

Join our mailing list to receive email updates on our Future of Energy documents

[Subscribe for updates](#)

Email us with your views at marketoutlook@nationalgrideso.com.

You can write to us at: Energy Security Modelling, Electricity System Operator, Faraday House, Warwick Technology Park, Gallows Hill, Warwick, CV34 6DA

The *Winter Outlook: Early View* is part of a suite of publications prepared by the Electricity System Operator on the future of energy. They inform the energy debate and are shaped by feedback from the wider industry. Visit [Winter Outlook](#) on our website to view our publications.

Electricity System Operator legal notice

Pursuant to its electricity transmission licence, National Grid Electricity System Operator Limited is the system operator of the national electricity transmission system. For the purpose of this outlook document, the terms “we”, “our”, “us” etc. are used to refer to the licensed entity, National Grid Electricity System Operator Limited.

National Grid Electricity System Operator Limited has prepared this outlook document pursuant to its electricity transmission licence in good faith, and has endeavoured to prepare this outlook document in a manner which is, as far as reasonably possible, objective, using information collected and compiled from users of the electricity transmission system together with its own forecasts of the future development of those systems.

While National Grid Electricity System Operator Limited has not sought to mislead any person as to the contents of this outlook document and whilst such content represents its best view as at the time of publication, readers of this document should not place any reliance on the contents of this outlook document.

The contents of this outlook document must be considered as illustrative only and no warranty can be or is made as to the accuracy and completeness of such contents, nor shall anything within this outlook document constitute an offer capable of acceptance or form the basis of any contract.

Other than in the event of fraudulent misstatement or fraudulent misrepresentation, National Grid Electricity System Operator Limited does not accept any responsibility for any use which is made of the information contained within this outlook document.

