



UK Government

Panel of Technical Experts

Report on the NESO Electricity Capacity
Report 2026



© Crown copyright 2026

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit nationalarchives.gov.uk/doc/open-government-licence/version/3.

Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.

Contents

Preliminary Comments & Summary of Recommendations	4
Recommendations	8
Introduction	9
Role of the Panel of Technical Experts	9
Scope	9
Process	10
Commentary on Analysis and Results	12
Introduction and context	12
GB Demand	14
General Comments	14
Demand Uncertainty Analysis	16
GB Supply	17
General Comments	17
Non-Delivery	18
Over-Delivery	20
Supply Chain Risk	21
Parameters	21
De-rating Factors	22
Wider Issues	25
Preview of T-5 to T-8	25
Interconnectors	26
General Comments	26
Interconnector De-rating Factors	31
Overall Considerations	36
Methodology	38
Conclusions on Target Capacities	42
Quality Assurance	43

Preliminary Comments & Summary of Recommendations

1. The role of the Panel of Technical Experts (“PTE”) is to scrutinise with impartiality and to contribute to the quality assurance of the annual Electricity Capacity Reports (ECR) by the National Energy System Operator (NESO). The purpose is to provide technical advice to inform the policy decisions at the Department for Energy Security and Net Zero (DESNZ) for the subsequent Capacity Market (CM) auction procurements, through this report and informal consultations.
2. During April and May 2026, the PTE were presented with the initial results from the modelling for the 2026 ECR. In response to comments from the PTE, Ofgem and DESNZ, the final 2026 ECR was prepared by NESO and sent to DESNZ by the end of May 2026.
3. The PTE members who prepared this report on the 2026 ECR are Derek Bunn (Chair), Jacopo Torriti, Christopher Harris and Lisa Waters.
4. In fulfilment of our role, we have scrutinised NESO’s 2026 ECR on the target capacity proposed for the T-1 Auction for Delivery Year 2027/28 and the T-4 Auction for the Delivery Year commencing 2030/31, and this document presents our conclusions.
5. Through the PTE’s previous reports (2014-2025), the PTE has made 107 recommendations in total (of which 14 were from 2025) for improving the methodology and reliability of the modelling by which target capacities are calculated. NESO has taken actions on most of these as reported in the ECR. As usual, we make some recommendations for future work. In doing so the PTE are mindful of the need for the appropriate processes and procedures to be followed ahead of any changes that may be undertaken.
6. The PTE has engaged in relevant discussions with NESO, DESNZ and Ofgem during the process of NESO formulating the 2026 ECR. We are satisfied with the constructive and timely consultations and believe that all parties have worked well together in formulating the analysis and recommendations.
7. The overall analytical approach has been similar in principle to previous years, but substantially updated with new information and an evolution of some important aspects of the analytics.
8. We discussed thoroughly the sensitivities that went into the modelling and their inclusion in NESO’s usual ‘Least-Worst Regret’ (LWR) criterion to determine the capacities to procure. The approach taken by NESO this year has continued the precedent initiated in 2025 by adding a risk premium to the results of the LWR. We supported this ad hoc use of a risk premium last year and continue to do so again. This need for a premium is a

consequence of the methodology evolving to a greater reliance upon stochastic risk simulations with a sparser spectrum of sensitivities and scenarios in the LWR analysis. Nevertheless, NESO have introduced it as an ad hoc adjustment to provide a level of reliability consistent with that of last year's ECR recommendation. This adaptation to the previous ECR reliability level recommendation raises the question of whether the recent historical level of recommended reliability remains appropriate and highlights the continuing need for government to review its Reliability Standard. DESNZ evidently needs to consider whether this should be re-aligned, or re-interpreted, with the established risk appetite evidently adopted through the actual target setting processes. Whereas the Reliability Standard of 3 hours Loss of Load Expectation (LOLE) was defined in The Electricity Capacity Regulations 2014,¹ its actual implementation for setting the target capacity has allowed for a degree of discretion.² Thus, in practice, since 2014, the revealed preferences of both NESO and the Secretary of State have been for a higher level of security (lower LOLE).

9. The PTE has no remit to comment upon what the Reliability Standard should be, nor to advise DESNZ on the appropriate level of risk aversion, if any, to include in the capacity procurements. However, it does advise on methodological consistency. The PTE has therefore taken the pragmatic approach, as in previous years, of assessing the 2026 ECR according to its consistency with the reality of the targets recommended by NESO and accepted by the government to date. Nevertheless, this continuing implementation of a risk premium adjustment to the LWR result does, we believe, display the increasing need to re-visit the Reliability Standard, and its associated parameters, so that risk premia in future can be applied from a more formal framework and clear criteria. In fact, NESO appear to be aligned with this requirement as a key message in their "Resource Adequacy in the 2030s" report³ was that *"we will need to continue to develop new metrics to assess adequacy that can complement the use of existing ones such as Loss of Load Expectation"* (p7).
10. We have considered the target capacity recommendations by NESO and make the following recommendations:
 - Regarding the T-1 recommendation for the 2027/28 Delivery Year by NESO of 5.0 GW in the ECR, we are comfortable with the analysis and its inclusion of a 0.4 GW risk premium above the LWR results to maintain a level of risk aversion consistent with previous Secretary of State determinations. This procurement includes a substantial provision for expected non deliveries and, as usual the PTE would suggest an autumn review with respect to new information, particularly on non-delivery risks.
 - Regarding the overall T-4 recommendation for the 2030/31 Delivery Year by NESO of 41.4 GW, we agree that this is appropriate according to the analysis in the 2026 ECR. This analysis has, for the first time, included a data-based expectation of the non-

¹ [The Electricity Capacity Regulations 2014, Regulation 6.](#)

² NESO's requirements within the ECR under [The Electricity Capacity Regulations 2014, Regulation 7\(2\)](#), are stipulated as "having regard to the reliability standard" and [The Electricity Capacity Regulations 2014, Regulation 12\(5\)](#) for Secretary of State is to "take into account the reliability standard".

³ [NESO Report on Resource Adequacy in the 2030s.](#)

delivery which could occur between the outcome of the T-4 auction and the T-1 auction associated with the same delivery period. As this is a rational expectation of outcomes to which the T-1 analysis would have to adapt, it is in effect procuring the same volume earlier. The presumption is a net benefit from the potentially greater technology scope and liquidity available at T-4 compared to T-1. DESNZ may wish to maintain the rationale for this new non-delivery element, alongside their usual deliberations on T-1 set-aside, under review for cost effectiveness.

11. Thus, the PTE anticipates that more information will become available in time for the usual Autumn adjustments and suggests that a careful re-evaluation of the supply-side of the Base Case, notably changes to the connections queue, non-delivery, as well as the various current and possibly emerging interconnector risks,⁴ be undertaken at that time.
12. Regarding the interconnector de-rating factors, the role of the PTE is to recommend single values for each country from within the ranges provided in ECR 2026, with regard to the commentaries advanced by NESO and the PTE's critical assessments. Previously in our analysis of ECR 2025, we took a cautious perspective on the new Equivalent Firm Capacity (EFC) modelling and recommended values on average substantially below the NESO Base Cases. We continue to be cautious but, with regard to the improved EFC modelling in ECR 2026 and other factors, we suggest a slight increase in the overall average, closer, but still below, the average Base Case values in ECR 2026. The individual country details are explained in relevant sections 111 – 125 below and are summarised in the Table below.

PTE Recommended Interconnector De-rating Factors by country:		
	2030/31 (upcoming T-4 auction)	2029/30 (previous T-4 auction for reference)
Ireland (Single Electricity Market)	62%	61%
France	71%	69%
Belgium	71%	69%
The Netherlands	71%	69%
Denmark	71%	69%
Norway	75%	77%
Germany	71%	69%

⁴ This should have regard to the May 2026 notice: [Interconnector trading restrictions for NESO](#).

13. Overall, we were very pleased with the open and constructive process of engagement with NESO and DESNZ. We thank them for their extensive efforts to develop clear and timely analysis and address many of the technical issues which we have raised. We have also taken note of various industry comments, as invited annually by NESO, on the interconnector de-rating estimations.

Recommendations

14. The new recommendations in our report are listed below. The numbering follows on from the 107 Recommendations in previous PTE reports.

Recommendation 108: NESO should introduce a structured framework for decomposing year to year forecast revisions in peak demand, explicitly distinguishing between methodology changes, parameter recalibration, data updates, and underlying demand fundamentals.

Recommendation 109: NESO should explicitly separate and clarify with evidence the data centre demand assumptions by distinguishing between connection/build-out uncertainty and operational utilisation (load factor) uncertainty, and to set out the methodology and data sources underpinning each component, including the implications for peak demand and capacity requirements.

Recommendation 110: NESO should set out the parameterisation of key uncertainty drivers, including distributional assumptions, correlations between variables, and the treatment of tail risks, and by demonstrating the sensitivity of peak demand outcomes to these inputs.

Recommendation 111: NESO should reconsider presenting a more precise analysis of potential over-deliveries in future ECRs.

Recommendation 112: NESO and DESNZ should continue to review all the de-rating factors and consider new methodologies for DSR.

Recommendation 113: NESO should continue to develop clarity on the evolution of the LWR methodology into becoming fully stochastic and, with DESNZ, as a consequence, consider a more formal approach to the use of risk quantiles and risk premia in the procurement criteria.

Introduction

Role of the Panel of Technical Experts

15. The government commissioned, through an open and transparent procurement process, an independent Panel of Technical Experts for the enduring Electricity Market Reform (EMR) regime, commencing in February 2014. The role of the PTE is to scrutinise with impartiality and to contribute to the quality assurance of the annual ECRs by the Delivery Body (NESO). The purpose is to provide technical advice to inform the policy decisions at DESNZ for the subsequent Capacity Market auction procurements.
16. The PTE's first report on NESO's analysis to inform Capacity Market procurement decisions was published in June 2014. This is the PTE's 13th report, focused on the modelling and results of NESO's recommended capacity to secure for the 2030/31 T-4 Delivery Year and for the 2027/28 T-1 Delivery Year.
17. The background of the members and terms of reference of the PTE are published on the government website.⁵
18. This report has been prepared for DESNZ by Derek Bunn (Chair), Jacopo Torriti, Christopher Harris and Lisa Waters.

Scope

19. The scope of the PTE's work is to impartially scrutinise and quality assure the analysis carried out by NESO for the purposes of informing the policy decisions for the Capacity Market procurement. This includes scrutinising: the choice of models and modelling techniques employed; the inputs to that analysis (including the ones DESNZ provides); and the outputs from that analysis - scrutinised in terms of the inputs and methods applied. The PTE reviews whether the analysis is robust and fit for the purpose of government taking key policy decisions. The PTE assesses the limitations of the analysis and how these may impact the government's deliberations on capacity procurement. This includes, for example, considering potential conflicts of interest NESO or others involved might have in influencing the analysis.
20. The PTE's role is a technical function and it has no remit to make suggestions on the Capacity Market mechanism design, its regulation or wider EMR policy, government's objectives, or the deliverability of those objectives, unless otherwise requested. The PTE's Terms of Reference mean it cannot comment on affordability, value for money or achieving least cost for consumers. These matters are excluded from the PTE's scope and therefore from this report. Nevertheless, the PTE is mindful of the need to avoid the costs to consumers of over-procurement. This means the Panel does not have a role in

⁵ Further information available on the [PTE webpage](#).

advising how the analysis should be interpreted for the purpose of those policy decisions, but, where relevant, the PTE has commented on how policies impact the modelling and parameter setting in the ECR.

Process

21. During the course of the PTE's work, NESO has presented its methods, assumptions and outputs in relation to their core task of recommending the auction target capacity in the Capacity Market and the PTE has had opportunity to question NESO during the development of its analysis and recommendations.
22. To carry out its work, the PTE met with NESO, DESNZ and Ofgem regularly during 2025/26 to discuss the development projects, the production plan and subsequently the modelled outputs for the 2026 ECR. Subsequently, the PTE provided interim views to DESNZ before presenting preliminary drafts of this report for further considerations and feedback from DESNZ, Ofgem and NESO.
23. The PTE has generally focussed more closely on the areas that appeared to be of highest impact and greatest uncertainty. Accordingly, our commentaries are structured under:
 - Demand evolution
 - Supply-side changes
 - Interconnector de-rating
24. As required by the PTE's Terms of Reference,⁶ the PTE also kept in mind the potential for NESO to be confronted by potential conflicts of interest. The PTE, throughout this process, has sought to mitigate this by carefully challenging assumptions and the PTE has maintained a presumption that a natural tendency for any utility or System Operator would be to be risk averse and to therefore slightly over-secure resources. We note that NESO would bear some of the loss of reputation for any blackouts, and bears none of the costs of over-procurement, and so could be expected to weight the possible risks of procuring less capacity more than they might credit the cost-savings. The PTE, however, has no evidence that would make us believe that NESO has substantially exploited its privileged position.
25. This report is not comprehensive nor is it a due diligence exercise, but the PTE believes that it has nevertheless identified some important issues that have material consequences. Accordingly, and in line with our approach in previous years, the PTE has not remarked on details of various matters which were raised and satisfactorily resolved or are part of on-going NESO modelling developments.

⁶ Further information, including [Terms of Reference](#), available on the [PTE webpage](#).

26. This report has been prepared from information provided by DESNZ, NESO and Ofgem and the collective judgement and information of its authors. We have also taken account of written stakeholder responses to the interconnector briefing material made public by NESO.⁷ Whilst this report has been prepared in good faith and with reasonable care, the authors expressly advise that no reliance should be placed on this report for the purpose of any investment decisions and, accordingly, no representation of warranty, expressed or implied, is or will be made in relation to it by its authors and nor will the authors accept any liability whatsoever for such reliance on any statement made herein. Each person considering an investment must make their own independent assessment having made whatever investigation that person or organisation deems necessary.

⁷ [2026 ECR Interconnector Modelling Briefing Note](#).

Commentary on Analysis and Results

Introduction and context

27. As in its previous ECRs, NESO lays out its modelling approach and its scenarios and sensitivities that frame its findings on the amount of capacity to secure in the auctions. In the legislation of 2014, the government's Reliability Standard of 3 hours Loss of Load Expectation (LOLE) is defined.⁸ Nevertheless, whilst the 3 hours LOLE has been the expressed target, in practice it has been interpreted as 3 hours LOLE under a cautious "Least Worst Regret" (LWR) consideration over a range of sensitivities and scenario conditions, resulting in lower associated Base Case LOLEs. DESNZ determinations have broadly endorsed this position to date, which have been described as cost-effective by 3 Capacity Market reviews, including the official 5-year and 10-year assessments.⁹
28. The "regrets" in the LWR calculation are evaluated at Value of Loss of Load (VoLL) for under procurements and Cost of New Entry (CONE) for over procurement, both parameters having been set over 10 years ago. The result is that the procured LOLE in recent years, under the assumption that the Base Case expectations are unbiased, has been less than 3 hours. Furthermore, the approach taken by NESO this year, as in 2025, has included a risk premium additional to the results of the LWR to align procurement at T-1 with the previous levels of risk aversion. The explicit implementation of this risk premium adjustment to the LWR result does, we argue, display an increasing need to re-visit the Reliability Standard, the implications of the LOLE definition¹⁰ and an update to the related VoLL and CONE parameters.
29. Recommendation 94 in our 2025 PTE Report¹¹ did in fact suggest that DESNZ should reconsider the Reliability Standard, its parameters and relevant implications for the ECR assessments, to reflect the government's established and preferred level of resource adequacy risk, as revealed by procurement decisions for the capacity mechanism. We still consider that this update is necessary to provide a more robust framework as the ECR methodology transforms from the LWR to a more stochastic approach.
30. The major elements in the analysis are GB demand and supply, together with an assessment of the increasing reliance upon interconnection resources from neighbouring countries. Furthermore, since the PTE has an explicit role in

⁸ [The Electricity Capacity Regulations 2014, Regulation 6.](#)

⁹ Reports include: [Capacity Market: Five-Year Review](#), [Capacity Market Evaluation](#) and the [Capacity Market: Ten-Year Review](#).

¹⁰ The "loss of load" in the LOLE calculation is defined in legislation for GB, for the purposes of the ECR assessments by NESO, as occurring at the point at which the System Operator has to start taking mitigation actions in a stress event to potentially avoid or limit consumer disconnections. This is unlike the more usual definition, as used by ACER, for example, in its EU directive, which would define loss of load at the point of consumer disconnections. Nevertheless, even in GB, VoLL was apparently estimated as the average cost of actual consumer disconnections.

¹¹ [NESO Electricity Capacity Report 2025: findings of the Panel of Technical Experts.](#)

recommending an interconnector de-rating factor for each country, we devote a detailed section to that element. We therefore organise the subsequent sections according to those main elements.

GB Demand

General Comments

31. In the 2026 ECR there have been significant developments on the demand modelling side, reflecting a continued transition from deterministic scenario modelling toward more granular and increasingly probabilistic approaches. Key changes include the introduction of a more detailed peak demand breakdown, a greater use of metered profile data within subsector models, and the stochastic treatment of uncertainty using Monte Carlo sampling across major demand drivers.
32. In the 2026 10-year Base Case, updated heat pump load profiles represent a primary modelling change and are identified as a key driver of a softening in future peak demand, relative to previous assumptions. This reflects changes in the temporal distribution of heating loads rather than a reduction in underlying electrification.
33. Relative to FES25 (Future Energy Scenarios), the 2026 Base Case appears materially more conservative on Electric Vehicle (EV) roll-out, heat pump penetration, demand-side flexibility participation, and data centre demand growth, with the 2026 ECR report providing greater clarity on how these changes are explained relative to the previous forecast. Nonetheless, the outlook continues to imply substantial system growth over the next decade, with approximately 34% growth in overall electricity demand and 22% growth in peak demand. Higher peak demand remains a major driver of the capacity requirement increase in 2031/32, beyond T-4 for ECR 2026, contributing around 1.5 GW to the T-5 analysis.
34. Notwithstanding these modelling developments, demand modelling in the ECR is increasingly exposed to structural changes driven by electrification, emerging large loads (e.g. data centres), and evolving consumption patterns. The 2026 ECR features year-on-year adjustments to model parameters and inputs, reflecting improved data visibility and updated assumptions across FES and Base Case frameworks.
35. The PTE observes that there is some degree of instability across successive forecasts, with noticeable differences between the previous ECR projections and realised peak demand.¹² Year-to-year changes are not fully decomposed, reducing visibility of the distinction between methodological changes, parameter recalibration, data updates, and genuine structural shifts in demand fundamentals.
36. The current ECR methodology provides a description of how demand forecasts are constructed and the data they rely on. However, the methodology does not include a structured decomposition of year-to-year forecast revisions. In particular, the methodology does not explicitly attribute changes between successive ECR forecasts to

¹² [NESO Electricity Capacity Report 2025: findings of the Panel of Technical Experts.](#)

methodology updates, parameter recalibration, data improvements, or underlying demand fundamentals.

37. The PTE recommends that NESO establish a formal framework for forecast stability building on prior data and modelling improvements in order to improve transparency, traceability, and confidence in the stability of demand projections and associated capacity requirement signals.
38. NESO should introduce structured decomposition of year-to-year forecast revisions. For example, this could consist of a new section in future ECR reports providing a clear breakdown of changes in peak demand relative to the previous year, explicitly attributed to methodology updates (e.g. new modelling approaches, structural changes), parameter recalibration (e.g. load factors, electrification rates), improved data visibility (e.g. updated datasets, connection information), and underlying demand fundamentals.

Recommendation 108: NESO should introduce a structured framework for decomposing year to year forecast revisions in peak demand, explicitly distinguishing between methodology changes, parameter recalibration, data updates, and underlying demand fundamentals.

39. Data centres represent a rapidly growing and highly uncertain component of demand, and separating pipeline uncertainty from utilisation assumptions is necessary to improve traceability and robustness of peak demand modelling.
40. The PTE notes that projected data centre demand has changed materially in this year's modelling, with assumed utilisation rates reduced significantly and corresponding long-term electricity demand forecasts revised downward. The PTE welcomes the improved use of real-world data sources, including network-level operational data and cross-checks with external benchmarks, which strengthens the evidential basis of the modelling.
41. However, despite these improvements, the methodology continues to combine multiple sources of uncertainty within the calibration framework. There remains an important distinction between: (i) uncertainty around connection and build-out of data centre capacity; and (ii) uncertainty around operational utilisation or load factors once connected.
42. The current approach appears to capture some of these effects implicitly, but the evidential basis and parameterisation of the assumptions are not yet sufficiently transparent. Large revisions to utilisation assumptions can materially alter projected peak and annual demand outcomes and may therefore introduce instability into the ECR demand outlook. There is also limited visibility on the extent to which assumptions regarding demand management obligations, or "grid supportive" operational arrangements, or potential on-site generation are embedded within the modelling assumptions for data centres. The PTE recognises that demand management requirements for data centres remain subject to future policy development.

43. The PTE considers that data centre demand modelling would benefit from a more explicit treatment of load factor uncertainty and operational arrangements. This is important given the increasing significance of data centres within projected commercial electricity demand and the sensitivity of adequacy outcomes to changes in utilisation assumptions.

Recommendation 109: NESO should explicitly separate and clarify with evidence the data centre demand assumptions by distinguishing between connection/build-out uncertainty and operational utilisation (load factor) uncertainty, and to set out the methodology and data sources underpinning each component, including the implications for peak demand and capacity requirements.

Demand Uncertainty Analysis

44. The PTE notes that the uncertainty analysis in the ECR is evolving towards a more fully stochastic framework. Structural demand drivers, such as electrification of transport and heat, industrial demand growth, data centre expansion and appliance efficiency, are increasingly modelled as probabilistic inputs within the Base Case, rather than being represented solely through alternative FES Pathways. This development represents a logical progression of the modelling framework, allowing a wider range of uncertainty to be captured within a single coherent analytical structure. The 2026 ECR provides explicit quantification of sectoral uncertainty ranges. However, it also introduces additional complexity and places greater reliance on the specification of input distributions and their interactions.
45. The PTE observes that there is currently limited transparency on how these stochastic inputs are parameterised, including the selection and calibration of probability distributions for key drivers; the treatment of correlations between variables; and the representation of tail risks and extreme outcomes.
46. This limited visibility suggests scope for further clarity in assessing the robustness and calibration of the uncertainty analysis. Additional transparency would help in evaluating how sensitive peak demand outcomes are to individual drivers, or whether the combined uncertainty framework appropriately reflects empirical evidence and system risks. The current approach still embodies a degree of model risk, particularly as the framework is extended to incorporate an increasing number of interacting variables.
47. The PTE recognises that this transition towards a more integrated stochastic approach is work-in-progress. However, further development is required to ensure that increased methodological sophistication is matched by sufficient transparency.

Recommendation 110: NESO should set out the parameterisation of key uncertainty drivers, including distributional assumptions, correlations between variables, and the treatment of tail risks, and by demonstrating the sensitivity of peak demand outcomes to these inputs.

GB Supply

General Comments

48. NESO's modelling of supply starts with the use of the Transmission Entry Capacity (TEC) register. This register holds the generation types and their connected capacities to the transmission system, the larger embedded plants, and the new plants that are planning to connect, with their connection dates. However, following the implementation of the Connection Use of System Code (CUSC) changes CMP434¹³ and CMP435,¹⁴ the subsequent delays in the reordering of the connection queue and the issuing of new connection agreements, the TEC register has not been sufficiently up to date this year for a reliable forward view. The same is true of the queues to connect units to the distribution networks. NESO has therefore been working on the basis of knowing the current generation mix, but with limited visibility of future connections. Indeed, in the ECR 2026 document, NESO confirms that firm connections only at December 2025 were referenced. As a consequence, the PTE is concerned that the subsequent connections queue issues may not have been fully reflected in the modelling which NESO has undertaken.
49. Although the new build plants with Capacity Market and Contract for Difference (CfD) agreements from previous allocation rounds were "protected" under the queue management process for their places in the queue, that has not protected their connection dates. Thus, any new-build plants without existing agreements may have their connection dates significantly altered, as well as the costs of connection, and some may thereby choose to give up their places in the queue. The process has put plant into "gated" timetables, with Gate 2 projects having passed the new "Readiness" criteria (e.g., secured land rights, planning permissions) and "Strategic Alignment" criteria (meaning it aligns with UK clean power and spatial energy plans). These Gate 2 Phase 1 projects are all due to have connection dates prior to 2030, but while some new agreements have been offered, at the time of writing very few have been accepted.
50. The PTE is aware of anecdotal evidence that the delay in issuing the connection offers has resulted in some developments in the pipeline being delayed. Investors have not wanted to spend money with no firm connection dates on the table, nor known costs of connection. We trust that NESO's modelling team can get a better view of the pipeline of projects before any Autumn adjustment is made, but the risk of non-delivery is in our view elevated whilst the queue reordering remains uncertain.
51. Furthermore, the PTE is concerned that some Gate 2 Phase 1 projects, subject to Technical Limit connections, may not have connection offers before the end of 2026. For consideration by DESNZ, this may add to extra non-delivery risk beyond the NESO

¹³ [Further information on CMP434.](#)

¹⁴ [Further information on CMP435.](#)

ECR 2026 modelling and/or create additional uncertainty around prequalification that may impact the autumn adjustment process.

52. As the PTE has noted previously, the auction dates have slipped from allowing 4 years for new build plant to deliver to now only about 3.5 years. It is possible that this foreshortened lead-time may deter larger projects, increase their non-delivery risk or, at least, cause them to be late. This continues to add to the uncertainties.
53. The introduction of the Strategic Spatial Energy Plan (SSEP) will introduce some central planning for future investments of a kind that the GB market has not seen since privatisation. We are aware that DESNZ is currently consulting on how the Reformed National Pricing model should be delivered,¹⁵ including the levels of target capacity for both generation and networks. It is therefore not yet clear how this will play out; whether it will affect T-4 or beyond. At the current time, general market intelligence indicates that the queue itself has lost a little capacity, although we understand that about two-thirds of proposed projects have seen their dates move out in time. We also understand that the networks are building to the queue rather than the capacity limits in NESO's Clean Power 2030 plan.¹⁶ Were this queue to keep building, then it would appear there is a good chance of significant over-delivery, albeit potentially closer to 2030/31 than in the nearer term.

Non-Delivery

54. The PTE welcomes the additional analysis that NESO has undertaken around non-delivery. The PTE also remains concerned about the risk of non-delivery due to the ongoing uncertainty around connection dates: whether resulting from connection dates moving out, project withdrawals due to delays, or increasing costs. Last year we noted that this uncertainty was particularly relevant for the T-4 and the T-5 to T-8 analyses, but this year, with the current delays to the offers, the PTE consider it is also a T-1 risk. Again, we note that this is not simply an issue for the capacity-obligated plant, but for the contracted background as well. The ECR modelling, based on data as of December 2025, assumed that parties with connection dates will be connected on those dates, but as noted above, the PTE are aware that there remain connection delays.
55. The PTE appreciates that NESO makes use of other market intelligence to inform its views around non-delivery and over-delivery. However, as previously noted, the timing of the Capacity Market terminations for failure of Satisfactory Performance Days (SPDs) means that the ECR does not have the best view of Capacity Market non-delivery. More generally, the PTE does not feel the SPD regime provides good assurance as it does not actually request parties to deliver when called, which is what a real Stress Event would require them to do, albeit with 4 hours' notice. PTE recommendation PTE 62¹⁷ proposed that the timing of all Capacity Market related activities should be revisited to

¹⁵ [DESNZ Reformed National Pricing Delivery Plan](#).

¹⁶ [NESO Clean Power 2030 Plan](#).

¹⁷ [National Grid ESO Electricity Capacity Report 2021: findings of the Panel of Technical Experts](#).

better inform the ECR, and this seems even more important to help mitigate late-stage T-1 risks.

56. The PTE welcomes NESO's recognition that the level of non-delivery remains a concern. We continue to suggest that the causes of non-delivery should be examined in more detail (see recommendations PTE 61¹⁸ and PTE 86¹⁹). For example, is late network delivery a key issue for new build? The work NESO has done this year has been very informative, and the PTE notes the higher levels of non-delivery that have been a consistent feature of the market. The PTE also notes that historically the focus has been far more on the potential non-delivery under the Capacity Market, rather than arising under other schemes such as the CfDs, or indeed the longer outages of existing plant. These related issues could, for example, become more important as hydrogen and Carbon Capture Use and Storage (CCUS) projects move into the fuel mix.
57. NESO's new analysis in ECR 2026 shows that there is an upward trend in non-delivery between the T-4 auctions and their subsequent T-1 recommendations, which has averaged 1.8 GW over the last 5 years, and 2.1 GW over the last 3 years. The Base Case assumes future unknown non-delivery after the T-1 auction of around 3.5 GW, an increase over recent years. This is supported by analysis not only of non-delivering CM plant, but also data from sources such as the EU Regulation on Wholesale Energy Market Integrity and Transparency (REMIT) reporting. In light of this, their resulting recommendation to adjust the T-4 target capacity by 2 GW appears to be prudently supported by evidence.
58. The T-1 NESO's Base Case also has 4.3 GW of known-non-delivery and 3.5 GW future unknown non-delivery, modelled statistically as in previous years. This is in line with the average level of non-delivery that has become apparent after the T-1 auction over the last 5 winters. It is possibly more worrying that NESO has no deeper visibility into this, regarding whether outage data are incorrect, outages unplanned, or if there is material non-delivery of plant with Capacity Agreements from the T-1 auction.
59. It is difficult to predict non-delivery, but there are undoubtedly factors such as lower gas running hours, increasing maintenance costs and outages due to aging plants, etc. that could see an increasing number of plants exiting the market, even if for limited periods. Managing this risk in T-4 rather than risking a higher T-1 target is prudent. Our general view is that whilst the T-1 was initially meant to help Demand Side Response (DSR) and make up for any missing volumes, it now seems to be doing more heavy lifting. The PTE suspect that older plant may prefer not to take a T-4 agreement and wait to see what their position is before possibly entering the market at T-1. However, making up significant volumes at T-1 runs the risk of a tight market with less technological choice and possibly a high price for customers to pay.
60. There remains an ongoing risk that for units committed with Capacity Market agreements, it is very difficult to manage their own non-delivery risk. It is outside the

¹⁸ [National Grid ESO Electricity Capacity Report 2021: findings of the Panel of Technical Experts.](#)

¹⁹ [Electricity System Operator Electricity Capacity Report 2024: findings of the Panel of Technical Experts.](#)

scope of the PTE to suggest policy reforms, but we have previously recommended through recommendations PTE 61²⁰ and PTE 81²¹ that a more thorough empirical characterisation on the causes of non-deliveries and non-availabilities would provide greater precision in future ECRs and perhaps prompt further remedies. In this context we note that the recently proposed higher Termination Fees may be a step in this direction.

61. The PTE notes DESNZ's initial proposals²² around facilitating the decarbonisation of plant currently in the Capacity Market. The Managed Exit Pathway A, as implemented, only allows for assets to exit T-4 agreements to transition to a Dispatchable Power Agreement (DPA) in order to facilitate conversion to power CCUS. This means they would not be able to then enter into T-1 if they hold a DPA, so there may not be additional capacity at the T-1 stage. Even if decarbonising plant comes back, it could have a lower capacity or different reliability due to plant dynamics.
62. The government has recognised that there is unlikely to be 5 years warning from decarbonising plant, which would allow NESO to model this in the ECR modelling for the T-4 target in future years.²³ Further, it appears improbable that any exiting plant would do so in line with the Delivery Year dates, as most would prefer to start work over the summer, when prices are lower. So far, no plant has announced a decarbonisation outage.
63. At the current time, the PTE agrees that it is prudent to account for more non-delivery at the T-4 stage, as NESO has proposed this year. In the coming years, this buffer would allow decarbonisation with less risk to security of supply. Further information around the likely outage times needed for decarbonisation at a commercial scale would be useful in order to consider this further.

Over-Delivery

64. The PTE notes that the delivery risk analysis is understandably asymmetric with its strong focus on non-delivery. As noted above, we have welcomed NESO's additional work on non-delivery and would like to see further analysis in this area. However, it is important to also assess how much over delivery is occurring. Technologies such as batteries have been able to build far faster than conventional plant and so, despite being backed by T-4 agreements, they may be appearing in the market 1 or 2 years before their original start dates. Some may even participate in the intermediate T-1 auctions, if convenient. Greater clarity on the extent of this source of over-delivery would evidently be useful. It is also not uncommon for some technologies to end up being slightly larger than first anticipated, for example as turbine designs become larger. It is notable how

²⁰ [National Grid ESO Electricity Capacity Report 2021: findings of the Panel of Technical Experts.](#)

²¹ [National Grid ESO Electricity Capacity Report 2023: findings of the Panel of Technical Experts.](#)

²² [Capacity Market: proposals to maintain security of supply and enable flexible capacity to decarbonise.](#)

²³ [Capacity Market: proposals to maintain security of supply and enable flexible capacity to decarbonise: consultation response.](#)

the size of wind turbines has increased, both on and offshore. We understand why there is a strong focus upon non-delivery, but the PTE considers that some empirical analysis of recent over-delivery, as an update to recommendation PTE 54,²⁴ remains appropriate, as indeed it used to feature more in previous years' ECRs.

65. The PTE also considers that there is likely to be over-delivery obscured in the data for storage. Taking account of the fact that storage assets have the special feature of being able to define their own specific connection capacities, it is possible that contracted capacities may be able to deliver larger amounts of energy in stress events, depending on the duration specified in the Battery Energy Storage System (BESS) CM assets and the actual events. There appears to be a large spread of durations contracted. The PTE consider that this may be worthy of a deeper analysis.
66. The Renewables Obligation (RO), which closed to new plant in 2017, is being replaced by the CfD regime, but as the contracts were for 20 years the RO does not fully unwind until 2037. The recent government announcement around encouraging plant to move to a new regime is welcomed, but the details are not yet known. NESO's modelling next year will need to consider how much RO plant may take up the new CfD option and what may instead choose to join the Capacity Market. RO plant, such as onshore wind, may also repower as it reaches the end of its current support. This may result in some over delivery that should also be considered.

Recommendation 111: NESO should reconsider presenting a more precise analysis of potential over-deliveries in future ECRs.

Supply Chain Risk

67. The PTE notes that whilst the NESO analysis considers the financial viability of new and existing generating assets, it has less focus on the supply chain issues. It is widely reported that lead times on major equipment have increased and the PTE observes that Ofgem's call for evidence on electricity network supply chains is evidently motivated by this concern. Ofgem reported that lead-times on transformers and cables had increased very substantially since 2021. Furthermore, supply chain delays are not a GB issue alone, with the media regularly reporting on delays across the world. This issue should be given greater attention in future analysis.

Parameters

68. For several years the PTE has flagged that the ECR modelling relies on a number of parameters that have not been updated and which may now be outdated. The Cost of New Entry (CONE) is an auction parameter and is also used in the LWR calculations. It is widely recognised that the costs of most new-build power stations have increased

²⁴ [National Grid ESO Electricity Capacity Report 2020: findings of the Panel of Technical Experts.](#)

significantly in the last few years, as evidenced in the reasons for the cancellation of a number of new projects. Although the auction price cap is a policy issue for DESNZ, it is evidently out-of-date²⁵ and the PTE feels it would be remiss not to observe that this could be an issue going forward for adequate liquidity in the auctions to ensure security of supply.

De-rating Factors

69. The PTE notes that setting most of the de-rating factors is a mechanistic process defined in the Capacity Market regime. Without a change to the Rules, NESO is therefore required to follow the prescribed process. Given the significant changes in the market that have occurred since the Capacity Market started and the new changes that are expected in the near term, the PTE considers that it would be timely for DESNZ and NESO to revisit these methodologies. In particular:
70. The calculation of the de-ratings using the average Maximum Export Limit (MEL) over the winter peak period, which is zero during an outage, adds nothing to the de-rating factors to recognise longer winter outages. These may become more common, and so would generally overstate plant availability.
71. There are significant volumes of smaller generators, such as reciprocating engines, in the Balancing Mechanism (BM), which could make it possible to calculate their own technology specific de-rating factors.
72. There are now sufficient BESS assets operational to consider an empirical review of performances to inform their de-rating factors alongside the technical and Scaled EFC methodologies currently in use. We note, in this respect, that some proposals have been advanced following NESO's 2024 Storage De-rating Methodology consultation.²⁶
73. The wind capacity is de-rated based on the EFC methodology, but there is no re-scaling to follow the same logic as applied to the EFC calculation for batteries. We recognise that spatial constraints have conventionally not been assumed to apply in stress events, but the PTE have mentioned previously that this presumption needs to be actively monitored.
74. Increasing co-location of BESS and solar will influence their effective de-rating factors.
75. With only 5 operational nuclear power plants, most nearing the end of their lives, the data set for establishing the de-rating factor remains a concern, as expressed by recommendation PTE 101.²⁷

²⁵ Cost Of New Entry (CONE) set in July 2013 – [Reliability Standard Methodology](#).

²⁶ [ESO Storage de-rating factors methodology review: consultation response](#).

²⁷ [NESO Electricity Capacity Report 2025: findings of the Panel of Technical Experts](#).

76. As older gas plants, notably Combined Cycle Gas Turbines (CCGTs), reach their end of life, the de-rating factors based on retrospective data may be less accurate as predictions.
77. The methodology for DSR de-rating factors is in the process of changing²⁸ following the end of the NESO STOR (short term operating reserve) service. The current methodology has used the mean committed STOR availability of non-BM STOR providers over the last three winters during the winter peak period (0700-1900, Monday-Friday) at times with demand above the 50th percentile. This has been an expedient solution, but not an accurate approach to DSR performance. DSR de-ratings now warrant a careful re-calibration. For example, with domestic DSR, it might be assumed that this would be mostly duration-limited, and therefore more comparable to short-duration storage. Evidently this needs thorough empirical evidence to establish.
78. Thus, the PTE welcomes DESNZ's proposal to develop an enduring DSR de-rating methodology (see Government consultation and response²⁹) and we recognise this is not an easy task. We have discussed with NESO and DESNZ the significant changes in the DSR markets, with the introduction of Demand Flexibility Service (DFS), new ancillary services markets, Virtual Lead Parties (VLP) and Virtual Trading Parties (VTP). Our current view is that, like generation, DSR is a diverse technology group, and some classification and sector specific de-rating is needed. However, given the quantities of DSR in the Capacity Market, it is critical that future modelling has a more robust set of assumptions around its likely contribution in a system stress event.
- 79. Recommendation 112: NESO and DESNZ should continue to review all the de-rating factors and consider new methodologies for DSR.**
80. The PTE appreciates that new fuels and technologies are difficult to model, as are changes to existing technologies. Nevertheless, NESO will need to address these issues going forward. With the GB Carbon Capture projects and HAR1 hydrogen developments starting to progress, it is timely now for NESO to engage with the project directors over the performance they are expecting, possibly requesting regular updates from commissioning.
81. Last year, the PTE noted that the Capacity Market Lower Capital Expenditure (CAPEX) threshold for refurbishing agreements³⁰ was a sensible step to maintain system security as the market decarbonises. The approx. 12.8 GW of refurbishing plant taking agreements in the T-4 auction for the 2029/30 Delivery Year suggests that the market has also welcomed the changes and will make commitments at the auction clearing price of £27.10/kW/year. Most of these agreements were for 1 year, 1.6 GW were for 3 years, and no 15-year agreements were awarded. It will be important to monitor if this

²⁸ [Capacity Market: proposed changes for Prequalification 2026.](#)

²⁹ [DESNZ Call for evidence: Capacity Market Consumer Led Flex.](#)

³⁰ [Consultation on Capacity Market: Proposals to maintain security of supply and enable flexible capacity to decarbonise: consultation response.](#)

refurbishment delivers on time and if the work creates any non-delivery risk in the intervening years.

82. The PTE notes the short-term support mechanism for large-scale biomass³¹, due to run from 2027 to 2031. As the support runs until March 2031, the behaviour of these facilities will be relevant for the ECR next year. However, we note, in this year's ECR, NESO's T-5 assumption that it switches to the Capacity Market.
83. The modelling reveals renewable energy de-rating factors with small changes for the respective T-1 and the T-4 Delivery Years compared to last year. The PTE notes that these changes are due to the installed capacities of each technology. As noted previously, the PTE is concerned that, as with many conventional technologies, CfD projects face increased funding costs and may also be late in delivering due to the connections reform and tight supply chains. The cancellation last year of Ørsted's Hornsea 4³² project gave a clear indication that there are issues with project delivery. This evidence further supports NESO's uplift of the target capacity to cover potential non-delivery in the intervening years. Recommendation PTE 100,³³ which was advanced to look deeper into non-delivery, remains important and should include all technology types.
84. NESO should extend the use of operational data to inform their modelling around wind, in line with recommendation PTE 70.³⁴ There are now significant amounts of new operational data that may influence operations, compared to the older historic performance used in the ECR analysis, to reflect the changes in the turbines and their locations. NESO's modelling assumes intermittent generation runs when it can and will not be constrained off in stress events, which are expected to be associated with low wind events. We understand this perspective, but it requires continued attention and may well not hold to the same extent going forward.
85. Solar power continues to grow with the real cost of solar panels falling and easier planning, at least for domestic installations. We noted the slight reduction in the de-rating factor, and this continues to be a reflection of their market penetration as the EFC de-rating methodology sees additional intermittent capacity adding incrementally less to security. With increasing co-location, it may be worth considering if the installed capacity of solar is overstated, as in a stress event any co-located storage is likely to have firm access rights. NESO should give greater consideration modelling these sites as they become more common.
86. On storage, we note the limited changes in the de-rating factors as expected under the Scaled EFC methodology. As noted last year, the PTE considers that there is now enough storage capacity in the Balancing Mechanism and ancillary services markets to inform the technical de-rating factors alongside the EFC methodology. However, we

³¹ [Transitional support mechanism for large-scale biomass generators: government response.](#)

³² [Ørsted 2025 announcement on Hornsea 4.](#)

³³ [NESO Electricity Capacity Report 2025: findings of the Panel of Technical Experts.](#)

³⁴ [National Grid ESO Electricity Capacity Report 2022: findings of the Panel of Technical Experts.](#)

recognise that the Capacity Market Rules would need to change in order to alter this de-rating methodology.

87. The PTE continues to consider that some thought needs to be given to the way BESS is likely to behave in a Capacity Market Notice (CMNs) situation, as storage may then have an incentive to charge in advance to fulfil their CM obligations. This may result in a fast descent into a stress event. This additional demand may need to be more explicitly modelled when estimating the peak demand in a stress event.

Wider Issues

88. There are ongoing challenges for NESO's ECR modelling as a consequence of the timings of the connection queue management, the CfD allocation rounds and the Capacity Market performance testing. It may be possible for DESNZ to review the timing of these activities as part of the changes that the market will see under Reformed National Pricing (RNP). The PTE has noted that the ECR modelling is very specific to security of supply, but there is now a lot of modelling being done in NESO in various timeframes, with various aims. The PTE is comfortable that the ECR is achieving its aims, given the limitations noted, but a more thorough coordination of market activities could improve the robustness of the modelling.
89. The previous PTE recommendations PTE 69³⁵ and PTE 88³⁶ reflect our ongoing concerns that as the networks are becoming increasingly congested, NESO's modelling assumes that, at a time of system stress, the plant able to run will not be constrained off. This assumption remains untested. We appreciate that Ofgem's Accelerated Strategic Transmission Investment (ASTI³⁷) project is trying to bring forward network reinforcements faster. However, we continue to advocate that further modelling of the various types of stress events which might be impacted by network constraints would still be prudent.

Preview of T-5 to T-8

90. The PTE thanks NESO again for responding to our recommendation PTE 80³⁸ to give a forward look at T-5 to T-8 Delivery Years. We find this analysis very informative. Whilst this is a high-level analysis, the trend for an increasing target capacity continues to suggest an apparent need for conventional generation to support security of supply. Again, we have not, however, advanced any implications which this forward view might have for modifying the T-1 and T-4 auction procurements at this stage.

³⁵ [National Grid ESO Electricity Capacity Report 2022: findings of the Panel of Technical Experts.](#)

³⁶ [Electricity System Operator Electricity Capacity Report 2024: findings of the Panel of Technical Experts.](#)

³⁷ [Accelerated Strategic Transmission Investment \(ASTI\).](#)

³⁸ [National Grid ESO Electricity Capacity Report 2023: findings of the Panel of Technical Experts.](#)

Interconnectors

General Comments

91. In 2024,³⁹ the PTE noted specific challenges for interconnectors with respect to their de-rated contributions to the capacity procurement target. In summary these were: the physical entity of an interconnector being a “wire” and not a generator, storage or demand response; System Operator (SO) relationships; compensation structures; coupling and coupling inefficiencies; jurisdiction borders; loop flow in alternating current (AC) systems with direct current (DC) links; opacity of SO-SO countertrades; the relationship with storage; and the behaviour of various actors.
92. In 2025,⁴⁰ the situation became more complicated. For example: i) the relationship between Carbon Border Adjustment Mechanisms (CBAMs), carbon trading schemes and interconnector flows, ii) further growth of wind and solar, driving temporal net demand patterns across Europe, iii) more uncertain outlooks across Europe for coal, gas and nuclear generation, iv) very long range stability effects on the European synchronous grid, v) high uncertainty on which of the 177 potential transmission projects listed in 2024 in the European Network of Transmission System Operators for Electricity (ENTSO-E) Ten Year Network Development Plan (TYNDP)⁴¹ will get built and when, and what the flow effects will be, vi) the uncertainty in the role of hydrogen (key in TYNDP and the NESO FES Pathways). At the highest level it should follow that more interconnection means more total security in Europe and that more GB-Europe interconnection means more security for GB and less curtailment of renewables. What is less clear is the extent to which increased interconnection within the EU may draw power away from GB in tight conditions under different scenarios.
93. In 2026, the situation is more complex still. Whilst most of the complexities are “more of the same”, additional complexities include: i) evolving EU approach to capacity mechanisms and hence their distinct characteristics for the treatment of interconnection risk (e.g. Belgium), ii) challenges in Europe similar to the UK in transmission and distribution build and new connections, iii) ongoing and projected relations with neighbouring countries, iv) wider geopolitical tensions, v) the effect of international border tariffs on industrial electricity demand, vi) developments in the electrification of heat, transport and hydrogen, vii) emerging indications of electricity export from GB in stress conditions.
94. There have been recent developments in interconnector flow restrictions, apparently related to local issues near to the interconnectors. At this point in time, these appear temporary, and apparently not evidently crucial for emergency stress situations. Accepting the general treaty understandings that internal grid flow challenges should not

³⁹ [Electricity System Operator Electricity Capacity Report 2024: findings of the Panel of Technical Experts.](#)

⁴⁰ [NESO Electricity Capacity Report 2025: findings of the Panel of Technical Experts.](#)

⁴¹ Further information on the ENTSO-E [Ten Year Network Development Plan](#).

impede interconnector flows, we have not taken into account these developments in the recommended interconnector de-rating factors. Since it is possible that more information might indicate lower de-rating in the near term (recognising the issue) but higher in the long term (resolving an outstanding issue), there is not enough information to make an informed decision on their overall aggregate effects on de-rating factors. Nor is it really appropriate for the PTE to speculate on potential treaty infringements.

95. As with previous years, in consideration of the many evolving uncertainties, NESO's interconnector de-rating factor ranges are very wide for each interconnected country. We concur with NESO's view here. The challenge, however, is that a single figure must be specified for the auction mechanism. On the basis of NESO's modelling outputs and our own considerations, we have continued to express the values in integer percentage terms, without implying high confidence that they can be estimated to within a 1% level of accuracy. Furthermore, the wide ranges of uncertainty imply that evidence for substantial changes in the de-rating factors from the previous year would require a convincing burden of proof. Nevertheless, the substantial amount of enhanced modelling and data analysis by NESO have been extremely helpful in helping the PTE to focus within the wide ranges. We have followed the two broad principles, as previously: (i) that individual de-ratings will tend to converge as Europe gets better connected and trading more harmonised, unless there are evident precluding actors; and (ii) that, because of the wide uncertainties, we prefer not to make any changes of >2% in any one year, unless there is a compelling reason for a larger change.
96. NESO has embarked on a substantial modelling change from the "time collapsed" method of analysing single time periods to a "time sequential" methodology, which can represent dynamic effects. We strongly support the addition of time sequential methods. We recognise that it has not been practical for NESO to use both methods in full at the same time (which would have been ideal to distinguish method change effects from contextual changes). The PTE recognises that the sequential approach is needed to attend to: i) storage; ii) diurnal flow reversal; iii) leads and lags in correlated residual demand (raw demand net of variable renewable energy). At the same time, time sequential analysis is extraordinarily difficult. For example: i) choice of state⁴² and dummy variables to form trajectories of volumes with diurnal profile, ii) mean reversion rates, iii) volatility and drift of means, iv) dealing with correlated movements even for single pairs of state variables, let alone multiple variables (e.g. residual demand in many countries), v) significant non stationarity (e.g. change in market structures), vi) limited number of past weather years, and possible increase in likelihood of weather extremes due to climate change. As can be seen in the assumptions book, NESO has done a great deal of analysis on sequence related effects, such as the leads/lags in residual demand in each country. This has been very useful in forming provisional views, prior to

⁴² The primary state variable is weather, for which a 34-year dataset is used. This captures all weather features (temperature, wind etc.) Whilst there is demand history, the relation to weather changes and there are non weather stochastic and trend drivers. Similarly, hydro reservoir levels depend on demand as well as precipitation and melt.

more data, of when each country is physically suited for export to GB in stress and whether the flow is likely to be one way or diurnally reversed for mutual support.

97. Many capacity mechanisms are designed using the time collapsed approach. For example, in finding target LOLE (or Expected Energy Unserved (EEU) or Cost of Lost Load) using VOLL and CONE. Hence, they play a role in sense checking. In doing so, it is important to use a form of load duration (or residual load duration) that calibrates sufficiently well to observed data. The percentage interconnector availability in relation to stress hours provides a good example of sense check, which is very much easier in time collapsed form.
98. Noting that the requirement is to provide de-rating factors, the PTE has requested more information on “non-flow” (not a standard term). Non-flow applies when loss adjusted price differentials across the interconnector are above de minimis levels and the interconnector is flowing at less than maximum capacity (or not flowing at all).
99. Technical unavailability, resource inadequacy and System Operator curtailment are causes of non-flow. There are numerous others and, furthermore, there is some evidence of reverse flow (i.e. opposite to the direction of the prices used for the analyses⁴³). Potential causes are: i) schedulers such as Euphemia flowing in the opposite direction of prices; ii) timing mismatches in price formation across interconnectors; iii) price dislocations between different markets such as reserve and half hourly energy; iv) different settlement period lengths. These need to be disentangled.
100. Whilst the principle is that SO action should always be executed by countertrading, and that the countertrades become market trades (so there is no non-flow), in practice, real time operations naturally focus on physical stability and do not always enable trading. Note that in enabling a countertrade, an exporting SO may use a reserve contract, which in the short term connects only loosely to the core wholesale market.
101. The PTE has expressed the view that each and every non-flow requires ex post explanation. This conforms to the EU and general treaty approach for the “causer pays” principle for non-flow. The ideal then is to identify two main cases: i) non-flow due to interconnector inability to flow (including where the interconnector operates according to design but the design limits flow) and ii) non-flow due to SO action or inaction, including grid inability to flow near the interconnector. We note here that the DESNZ-produced technical de-rating factors are applied ex post to PTE recommendations to determine the final individual de-ratings⁴⁴. Thus, currently, all causes of non-flow find their way into de-rating factors. The PTE consider that only interconnector inability should be included. In 2025, the PTE Recommendation 104 requested a detailed analysis of non-flow. Since

⁴³ NESO has provided some excellent analysis in this regard. Our best estimate is that apparent reverse flow is more an indication of the price used for analysis not being the price live at the time of flow. There was some unfolding of a picture of the Netherlands-Belgium having a different shift in flow or prices from day-ahead to intraday, to the countries to the west and east. At this point in time, the analysis is not sufficient to adjust de-rating factors.

⁴⁴ [Capacity Market: Hydrogen to Power and interconnectors](#).

the focus of the Capacity Market is stress conditions, then the analysis needs to discriminate stress deciles (or finer subdivisions of time, down to percentile), and thence (if the data provide a clear enough picture), projections to much higher stresses, in keeping with the LOLE target. GB price is a reasonably good proxy indicator for stress. The PTE is very supportive of the progress made so far by NESO so far on non-flow analysis, even though it did not become part of the ECR 2026, noting that it is required for several uses beyond assessing interconnector de-rating factors. The PTE encourages a continuation of this work, to estimate the mean, variances, and average correlations of all categories of non-flows. From this empirical basis, NESO should be able to develop an approach to understanding the non-linearity of non-flow correlations.

102. We recognise the importance of the different security of supply standards in neighbouring countries. At a very high level, the more spare capacity the neighbour has, the greater the GB benefit and the higher the interconnector de-rating factors. However, there is no clear picture due to: i) different core metrics for reliability standard (LOLE, EEU, reserve margin etc.); ii) different definitions of LOLE⁴⁵; iii) different levels of target (e.g. LOLE hours); iv) different projections of adherence to targets; v) national rules about withholding reserve capacity and the EU and treaty approaches to these; vi) different levels of VoLL; vii) different approaches to the marginal new entry capacity used for the Cost of New Entry; viii) different nettings of other revenue from gross CONE. Overall, whilst the PTE recognises the value of comparative Reliability Standards, they do not necessarily provide clear guidance in adjusting the interconnector de-rating factors.
103. The PTE analysed the flow in the stress correlation matrix in the assumptions book. However, whilst there does seem to be some information, such as the relative importance of Germany and Norway, the on-going work is not yet at the stage to form a clear picture. Whilst this analysis did not directly influence the recommended de-rating factors, the indications are that it is broadly consistent with Annex 4 in the ENTSO-E 2025 European Resource Adequacy Assessment⁴⁶ (ERAA), which presents a richer picture of scarcity spill-overs between countries.
104. Phase differences of the residual demands are, in practice, rather complex. Demand is affected by light, weather and timing conventions (e.g. clock changes). Phase differences of wind are particularly complex because the phase of the “wind front” has a nonlinear relationship to systematic wind speed changes.
105. The new EFC and time sequential analyses undertaken in ECR 2026 are extremely helpful and represent significant steps forward. The PTE is very pleased to acknowledge these and encourages their further development. As with all models of complex systems, achieving tractable results requires significant simplifications. We believe that the core approach taken by NESO is defensible, and the assumptions are expedient. Two modelling approaches create an interesting span of behaviour: (i) the ISI storage

⁴⁵ There is lack of clarity in the ERAA approach in annex 7 [ERAA 2025 Reports & Results](#).

⁴⁶ [ERAA 2025 Reports & Results](#).

interaction model where interconnectors are allowed to charge storage; and (ii) the NI no-interaction model, where interconnectors cannot charge storage. The two sets of results for each interconnector were intuitive in their differences and helped us to position the sensitivities of the results to assumptions about storage behaviour. We regard the modelling of storage as the more indicative, particularly going forward, but we note the comments⁴⁷ of NESO that the assumed storage charging behaviour may be unrealistic in the current model and that this methodology continues to be refined. Nevertheless, the PTE recognised the greater credibility in the new EFC methodology, compared to the “Garver” EFC approximations in ECR 2025. Whereas, in our interconnector de-rating factor recommendations in PTE 2025, we put forward values substantially below the NESO Base Case, in light of the EFC 2026 methodology improvement we have moved up from our PTE 2025 recommendations on average very slightly to be closer to the ECR 2026 ISI and NI Base Cases. However, we still advance values cautiously below both of those Base Cases, mainly from having regard to some of the European downside sensitivities.

106. On the NESO modelling of interconnector service during tight hours, the results are clearly dependent on the percentage of hours that are tight hours. The very high sensitivity to the chosen level of LOLE is clear from the analyses. Overall, whilst we encouraged this line of analysis, and still do, we did not use it to inform our views on average de-rating factors in this report.
107. Regarding European sensitivities, these results were intuitive and important. We note that there is a mix of structural endogenous scenario risk (e.g. renewable build, noting the EU commitment to the “fit for 55” and REPowerEU initiatives) and broadly uncorrelated exogenous risk (mainly weather, but some other random factors). It is particularly useful to examine the risk of low wind and high European demand, as this is evidently the key risk case for GB. With regard to this sensitivity especially, we have been persuaded, as in ECR 2025, to recommend de-rating factors below those produced under the ECR 2026 ISI and NI Base Case results.
108. Modelling leads and lags is difficult in this case because the relationship between wind speed (i.e. wind generation) and wind front movement (i.e. leads and lags in generation) is not straightforward. Here the exposure is particularly associated with peakiness of the diurnal demand profile. In simple terms, peaky structures bring in storage as key actor, but with flat structures, the ability to charge in the off peak is less. The continuing evolution of the diurnal demand profile is significant, as described in the demand section of this report.
109. The NESO time sequential analysis has been extremely helpful in both indicating the general direction of travel for interconnector de-rating factors, and the differences between countries. It is plausible that EU borders provide some frictions, and we appreciate that one of the necessary modelling compromises is the construction of a high-level simplification of the grid connecting countries, as distinct to details of the real

⁴⁷ [NESO Electricity Capacity Report 2026: Methodology and Assumptions Book](#), page 19.

grid. One node per country is assumed, unless otherwise specified (e.g. Norway), and, as in most models of this type, it is prices more than “electrons” that drive flow. This model contends reasonably well to transit power through any country, including Great Britain. We understand that it can contend to some degree with indirect flows (A to B to C), but that it contends poorly with loop flows in which power flows from country A to B and coincidentally back to a different part of A. Indeed, we observe more generally that spreading south-north and east-west flows across multiple lines reduces the total transmission build requirement at continental scale. We believe that it will be increasingly important to recognise this, and this is likely to drive to more strongly differentiated de-rating factors for individual interconnectors between each country pair.

110. As in 2025, the PTE, following NESO,⁴⁸ has paid attention to “second order” flows between countries connected to GB, and (to a lesser extent) further (“third order”, etc.) flows, especially on the north-south and east-west axes⁴⁹. For example, these include Ireland-France, France-Belgium-the Netherlands, Norway-Denmark-Sweden, and Germany to all of its neighbours. In addition, we see second order transit, such as Norway-GB-Denmark, and France-GB-France. Two-way flow is particularly important, as it implies that a country, which sometimes depends on imports, is generally incentivised to be reliable on export. Two-way flow can be diurnal (as renewable energy flows across Europe), seasonal (for example, hydro, photovoltaic), infrequent non-weather-related, episodic (for example, nuclear type faults), or weather episodic (for example, dunkelflauten, heat waves). There are clear trends for the increase in wind power (generally in north Europe and from the west) and solar photovoltaic power (generally in south Europe), but for more less growth in hydro (generally in the north and mostly available in spring). Beyond EU, we have not paid attention to other borders (European Economic Area, European Free Trade Association). It is theoretically the case that the EU Carbon Border Adjustment Mechanism, and its relation to other schemes such as carbon taxes and trading, should have a significant effect on continental flows. However, at this point in time, there are too many uncertainties to form a view, and hence PTE has ignored all EU border effects, including CBAM.

Interconnector De-rating Factors

111. Taking advice into consideration, the DESNZ Secretary of State (SoS) makes a final adjustment based on the technical element of the interconnector de-rating factors. There are some situations where it is clear that there is a technical failure in one and/or other converter and/or in the line. However, there are other situations where an interconnector is functioning according to design, but the design does not accommodate flow. The latter could be placed in technical or non technical category, and this should not matter (provided that each line in a country has its own de-rating factor). The essential thing is

⁴⁸ [NESO Electricity Capacity Report 2025: Methodology and Assumptions Book](#), Section 2.7.

⁴⁹ North-South and East-West are generic themes across the world in power flow, deriving in particular from the rotations of the earth and the balance of solar and hydro resources between the equator and poles. In north Europe this is enhanced by the general flow of wind from the Atlantic.

clarity so that this form of non-flow is neither omitted nor double counted. REMIT submissions form part of the ex-post evaluation on technical de-rating. The non REMIT-submittable factors that nevertheless relate to the inability of the interconnector to flow at capacity are not in these data. These aspects, as in previous years, remain for DESNZ to disentangle and to make adjustments ex post to our recommendations. The PTE role is to make balanced recommendations based upon the results provided by NESO in the ECR, which are essentially resource-based and developed on the understanding that DESNZ will subsequently make technical adjustments. Consequently, our figures this year are, in this respect, on a like-for-like basis with last year.

112. For the specific countries, following the above considerations, we suggest:

PTE Recommended Interconnector De-rating Factors by country:		
	2030/31 (upcoming T-4 auction)	2029/30 (previous T-4 auction for reference)
Ireland (Single Electricity Market)	62%	61%
France	71%	69%
Belgium	71%	69%
The Netherlands	71%	69%
Denmark	71%	69%
Norway	75%	77%
Germany	71%	69%

113. In general, we concur with the high-level NESO prognoses in all countries. At a high level, we have: i) evaluated each country and aimed not to make >2% change to any de-rating factor (this constraint did not bite), ii) converged de-rating factors where there is no clear case to retain existing divergence, iii) raised the average slightly, on the basis of the PTE's interpretation of the overall NESO analysis, and iv) some PTE expert judgement. Previously in our analysis of ECR 2025, we took a cautious perspective on the new EFC modelling and recommended values on average substantially below the NESO Base Cases. We continue to be cautious but, with regard to the improved EFC modelling in ECR 2026 and other factors, we suggest a slight increase in the overall average compared to PTE 2025, closer, but still below, the average Base Case values in ECR 2026. We observe that NESO in their ECR 2026 have suggested very wide ranges which do not, taken as a whole, indicate persuasive reasons to either increase or

decrease the average interconnector fleet de-rating factor compared to the indications in ECR 2025. Rather, since the PTE 2025 recommendations were substantially below ECR 2025 Base Case values, in PTE 2026 we have moved up our average rating to be slightly closer to the ECR 2026 Base Case values (under NI and ISI), to reflect higher confidence in the EFC modelling, whilst still remaining substantially below the ECR 2026 Base Case values, having regard to European downside sensitivities. We refer to this as “convergence to ECR”, in our consideration of the various adjustment drivers in the relevant sections below.

114. Regarding a forward trend in the overall average for the interconnectors’ contribution to GB security, there are reasons to expect it to increase. This is due to: i) a continuous increase in the efficiency and scale of coupling and dispatch at continental scale, that enables long range north-south and east-west flow, ii) a continuous development of experience in mutual support for electricity stress, in terms of both intent (agreements, memoranda, etc.) and execution (formal and market mechanisms). Whilst we expect this trend to continue, it will be highly dependent on three things. These are: i) the precedents set for support, or lack of, and curtailments, in periods of stress, ii) the evolving relative likelihoods of high demand stress and low supply stress events, since long range flow is more constrained in the former, and iii) stress factors - heat wave stress and dunkelflauten stress are resolved by interconnectors in different ways. Whilst the Reliability Standard does not weight different seasons, it has a natural skewness towards the impact of dunkelflauten in winter (thereby making efficiency and scale of coupling more important). If this line of reasoning for a steady increase in the interconnector fleet average is correct, and there are substantial interconnector additions in the future, DESNZ and NESO may wish to consider if a strategic risk framework, that goes beyond the PTE’s remit, needs to be established to limit the systematic risk component that interconnectors comprise within the Reliability Standard.
115. **Ireland (Island of, Single Electricity Market (SEM)).** The complex picture was noted in 2025: i) wind from the west and sun from the east, ii) significant internal constraint, iii) uncertainty about data centres, iv) general uncertainty on demand growth, v) flow to and from France across the Celtic interconnector under various conditions, vi) transit and loop flow paths. The uncertainty about data centres is common to many countries, as described in a 2025 International Energy Agency report.⁵⁰ We note that, as in GB and all countries, the extent to which data centres help or harm security of electricity supply is strongly determined by policy. The policy in the Republic of Ireland⁵¹ can be summarised as “welcome, but you must help the grid”. Ireland mandates that new large data centres (>10MVA) provide dispatchable onsite or proximate generation/storage, matching 100% of their maximum import capacity to alleviate grid stress. This policy forces operators to adopt onsite power to secure grid connections. In addition, motivating initiatives include greater: i) load shifting and management, ii) “behind the meter” assets such as storage and different forms of power generation, iii) converter technology. Noting the phase difference between GB and SEM in residual demand, and

⁵⁰ [IEA Report on Energy Supply for AI.](#)

⁵¹ [CRU Decision on New Electricity Connection Policy for Data Centres.](#)

the relative isolation of SEM, there seems to be a strong incentive for both GB and SEM to cooperate closely in stress conditions. Relative to PTE 2025, the factors influencing the SEM interconnector de-rating factors in PTE 2026 are: i) convergence to ECR (up), ii) convergence to the fleet average (up), iii) confirmation of wind lag but (surprising) coincidence of SEM and European diurnal peak (level overall); iv) reduction in All-Ireland LOLE forecasts in ERAA 2026⁵² (up); v) NESO analysis indicating limited benefit of SEM when analysis GB and SEM together (down). Overall, for the T-4 Delivery Year, we therefore recommend a slight upwards change from 61% to 62%.

116. **France.** France is a large multi-connected resource, which creates a strong interaction with its neighbours' GB de-rating factors. Since the interconnector capacity to GB is high, this gives it a high weighting in the correlation matrix⁵³, driving down the de-rating factor. Whilst extremely hot summers in France impacts French nuclear output, this is broadly uncorrelated to other risks (e.g. low air conditioning capacity in northern Europe) and the main GB stresses are in winter. Relative to PTE 2025, the factors influencing the French interconnector de-rating factors are; i) convergence to ECR (up), ii) convergence to the fleet average (level), iii) French capacity mechanism (uncertain) iv) NESO time sequential analysis (up)). Overall, for the T-4 Delivery Year, we therefore recommend an upwards change from 69% to 71%.
117. **Belgium.** The PTE usually consider the de-rating factor to be similar to France and the Netherlands, without the downward correlation weighting adjustment applied to France. Belgian policy is leaning towards nuclear, with Doel 4 and Tihange 3 having life extensions, as anticipated in the 2025 PTE report. Belgium has a relatively high dependence on imports. In stress conditions it would compete with GB for imports from France, the Netherlands and Germany. The Belgian capacity mechanism aligns to the European norm, and this design gives greater weight to the capacity provider than the "wire" from it. The interactions between the Belgian and GB Capacity Markets are, as yet, unclear, as are prospective "recall" arrangements where export is curtailed under a pre-agreed capacity option. Relative to PTE 2025, the factors influencing the Belgian interconnector de-rating factors are: i) convergence to ECR (up), ii) convergence to the fleet average (level), iii) nuclear prospects (confirmed up), iv) competition with GB for import (down), v) NESO time sequential analysis (up), vi) Belgian capacity mechanism (uncertain). Note that the time sequential analysis indicates a slightly lower de-rating factor for Belgium than the Netherlands. However, we considered that the model risk in this was not sufficient to differentiate between them for 2026. Overall, for T-4, we recommend an upwards change from 69% to 71%.
118. **The Netherlands.** As with all countries, energy policy is evolving, and the energy mix with it. For the de-rating factor, we place the Netherlands in the France-Belgium-the Netherlands-Germany corridor and hence weight the de-rating factor closer to Germany than France. In 2025, PTE cited uncertainty in the Netherlands in relation to a bold hydrogen policy. There has been a degree of scaling back in the last year. As noted in

⁵² [All-Island Resource Adequacy Assessment 2026–2035](#).

⁵³ [NESO Electricity Capacity Report 2025: Methodology and Assumptions Book](#), Figure 15.

2025, the Dutch hydrogen strategy affects interconnector flows in a number of ways. For example: i) capacity dedicated to electrolyzers for stored hydrogen can become spare capacity in tight energy situations, ii) the Open Cycle Gas Turbine (OCGT) landscape changes in terms of build, convert, run, and endure for the longer term. Currently, we are aware that the Netherlands appears to be more cautious in terms of creating a capacity market and that it is overall a net exporter. Relative to PTE 2025, the factors influencing the Dutch interconnector de-rating factors are: i) convergence to ECR (up), ii) convergence to the fleet average (level), iii) hydrogen (unclear), Overall, for T-4, we recommend an upwards change from 69% to 71%.

119. **Denmark.** The overall picture in Denmark is complex. This is borne out by it having the highest interconnector de-rating factor range except Ireland-SEM. Danish flows are closely connected with those of its neighbours and the relationships with the neighbours. The route from north Norway to South Germany remains constrained at several points, with various resolutions at various times. We have seen GB simultaneously importing from and exporting to Scandinavia. The evolving positions of Norway and Sweden in relation to export on existing interconnectors has an uncertain effect on Denmark but appears more likely to be negative than positive. Relative to PTE 2025, the factors influencing the Danish interconnector de-rating factors are: i) convergence to ECR (up), ii) convergence to the fleet average (level), iii) aligning to east-west and north-south neighbours (slight up), iv) Norway and Sweden (uncertain). Overall, for T-4, we recommend an upwards change from 69% to 71%.
120. **Norway.** In 2024 and 2025, the political picture in relation to import from Norway was uncertain. Statements, including those made in Storting parliament, indicated a possibly increased exposure to curtailment from Norway. The picture has stabilised, however, with, for example, the consumer support schemes,⁵⁴ as less responsive demand may draw power to Norway in stress conditions. As with NESO, we generally expect the least non-flow correlation of all the interconnectors, although the picture is complex (for example, pan-European shortage pulling power south to Europe rather than west to GB, but a possible correlation lag benefit with GB). Over the longer term, as noted in 2025, more power from the North Sea wind preserves water in Norway which in turn can be used (and monetised) as a peak rather than bulk resource. We note the dependence of both reservoir height and power flow on snowmelt. Given that high demand is closely related to heat, then hydro power arrives late in winter/spring and later in pan European cold. Relative to PTE 2025, the factors influencing the Norwegian interconnector de-rating factors are: i) convergence to ECR (up), ii) convergence to the fleet average (down), iii) clearer political picture (level), iv) NESO time sequential analysis (up), iv) attenuated consumer price signals (down, but may rise due to EV growth), v) deeper insights into European heating demand and late snowmelt (down), vi) potential for mutually beneficial deeper cooperation between Norway and neighbours in relation to

⁵⁴ These have various phases but are broadly similar in effect, which is state support for increases above the hourly price index above a certain level. For a given structure of price elasticity of demand, a reduction in effective price experienced by consumers reduces the demand response. This in turn has the effect of making export less available in times of high prices in Norway.

hydro power (uncertain). Overall, for T-4, we recommend a downwards change from 77% to 75%.

121. **Germany.** The coal/gas overlap, or lack of, remains important. Limited overlap increases the exposure to gas, which exposes GB gas fired generation to less gas. The correlation matrix in the assumptions book presents Germany as generally having high correlations for import to GB in GB stress conditions. The indication is high association between Germany-to-GB flow and GB stress. All that we can surmise, is that directionally, the indication is a slight upward change to the de-rating factor of German interconnectors. Clearly Germany has an ongoing and potentially increasing exposure to dunkelflauten, but this does not differ substantially from last year. The lagged correlation analysis does indicate an elevation in the de-rating factor from the significant difference in peak phase to GB. Relative to 2025, the factors influencing the German interconnector de-rating factors are: i) convergence to ECR (up), ii) convergence to the fleet average (level), iii) gas/coal/nuclear mix (no clear picture), iv) NESO time sequential analysis (up), v) clarity on lag in residual demand (up), vi) ongoing increases in south-north and east-west flows (up, given the lag). Overall, for T-4, we recommend an upwards change from 69% to 71%.

Overall Considerations

122. The existence of multiple interconnectors per country presents a challenge when modelling a simplified grid model with only one line for each connected country pair. As noted above, interconnectors can simultaneously flow in opposite directions between country pairs. This can be effective in resolving intra-country constraints. Ideally the most significant loop flows between two countries should be analysed.
123. An enduring issue relates to the two definitions of lost load. One being the GB legal definition that includes periods with no consumer lost load, and the EU modelling one corresponding to consumer lost load. This comes into play when we consider the role of the continent in supporting Security of Supply in Great Britain. In simple terms, 3 hours LOLE in Europe for consumer lost load corresponds to a (much) higher LOLE using the GB definition. Since, when using like for like LOLE definition, a low LOLE country provides support to a higher LOLE country, then without further consideration, interconnectors to all European countries with LOLE~3 hours (EU definition) should have reduced de-rating factors. However, it seems likely that the de facto standards, evidently preferred by cautious System Operators (and ENTSO-E), are also much less than 3 hours consumer lost load. One source of information is actual data on a like for like basis. NESO publishes consumer lost load figures (MWh and minutes), which can therefore be compared on a like for like basis. Clearly the Iberian outage⁵⁵ has a significant effect on the European 2025 figures, and furthermore this was a very significant MWh event, due to the large MW loss.

⁵⁵ Lost load a little under 12 hours at transmission level and 24 hours at distribution level.

124. Storage is ever increasing in importance. The volume of storage requirement and the volume of storage are both rising. However, even before we consider interconnector flow, the optimum duration is evolving, as for example, in their roles of peak flattening and of voltage reduction. Interconnectors are intimately related to storage, and this is particularly complex when we have lags in residual demand. For example, we can resolve diurnal peaks by: i) storage, ii) interconnector flow with a country with leading or lagging residual demand peak, and iii) charging storage with interconnector flow. This is clear in the time sequential analysis performed by NESO. This is very much complicated by other storage roles such as reserve and ancillary services. The work done so far by NESO on the relation between interconnection and storage has been very encouraging. In this vein, the role of Electric Vehicles (EVs) in providing storage (with no round turn energy loss) may well increase. This can be modelled. The role of longer duration lower efficiency storage is uncertain. Whilst it has potential to enhance security of supply, the volumes within the T-4 timeframe are not sufficient to influence storage de-rating factors and still less to influence interconnector flows.
125. As in 2025, the greatest risk, in terms of long duration loss events, seems to be several dunkelflaute in winter. The 34 historic weather years may not be enough to model the largest risks and we welcome the NESO project to create more extensive forward-looking data for resource adequacy analysis.

Methodology

126. The PTE has always made a number of recommendations in its previous reports. Last year's (2025) PTE report made 14 new recommendations. All these recommendations, along with others raised by DESNZ, Ofgem and through NESO's internal review processes were considered by NESO (or National Grid ESO, as they were then known). Below we summarise our comments upon how these 14 PTE Recommendations have been developed.

PTE#	PTE 2025 Recommendations	Progress and PTE comments
94	DESNZ should consider an update to the Reliability Standard, its parameters and relevant implications for the ECR assessments, to reflect the government's established and preferred level of resource adequacy risk, as revealed by procurement decisions for the capacity mechanism.	This Recommendation remains with DESNZ and further progress is pending. The PTE re-asserts its importance to provide a sound basis for coherent procurement analysis.
95	NESO to update the historical time series of demand and wind data to include 2024/25, thereby extending the dataset to a full 20-year history.	NESO have commenced this work, and it is continuing.
96	NESO to reconsider and clarify how demand flexibility types (such as residential, industrial and commercial DSR; transport DSR; and Power Responsive) are quantitatively incorporated into the ECR methodology.	NESO have made substantial progress, but this is an important topic and further elaboration of the DSR components and impacts will be beneficial.
97	NESO and DESNZ to consider revisions to the DSR de-rating methodology to reflect the evolving structure of the DSR market. The de-rating methodology needs to be changed given the proposed gradual phase-out of non-BM STOR.	This is still in progress with DESNZ.

98	NESO to explicitly set out in future ECRs the assumptions underlying new demand uptake across both T-1 and T-4 auction horizons.	This is on-going and the data-centre assumptions should be a high priority for very thorough analysis.
99	NESO to integrate historic peak demand forecasting performance into its stochastic modelling of the Base Case demand uncertainty.	This work is progressing, but more work needs to be done to make the uncertainty ranges thoroughly specified and well-calibrated.
100	NESO to continue the work started with PTE 61 and PTE 81 to characterise more fully the empirical causal evidence on non-deliveries and non-availabilities.	NESO assigned this lower priority and deferred to a later date. We reasserted the importance of this in this report.
101	NESO to continue to assess more specifically the de-rating factors for end of life nuclear.	NESO assigned this lower priority and deferred to a later date. We repeated our observations on this in this report.
102	NESO with DESNZ should consider how Capacity Market Units' exit-to-decarbonise should be modelled in the ECR for future years.	NESO and DESNZ have started to initiate a process for managing this transition. We would like to reaffirm its importance.
103	DESNZ and NESO, with industry input, to consider a timetable that allows for CfDs, connection applications and the Capacity Market to work in the most efficient manner with respect to the timely flow of information to support the related decision-making.	NESO assigned this lower priority and deferred to a later date. We reasserted the importance of this in this report.
104	NESO should undertake an empirical analysis of a recent and substantial sample of interconnector non-flows to GB. On the basis of this, NESO should consider constructing, for key risk scenarios such as dunkelflauten, intuitive correlation matrices to inform the correlation analyses used for interconnector de-rating factors.	NESO has undertaken substantial analysis in this area that has been highly informative. A great deal of progress has been made and the PTE encourages continuation of this work.

105	NESO should consider estimating the interconnector de-rating factors more consistently with the actual, rather than nominal, GB LOLE target procurement in the ECR.	This has been very challenging, in large part as there is a lack of clarity in neighbour countries on what is the true definition of LOLE used in targets, and what are the ex post measurements of these. This is an ongoing challenge, and we encourage as much conformity as possible.
106	The modelling of de-rating factors should be specified for individual interconnectors (as per PTE 33) even if subsequently grouped by country.	This issue remains to be addressed.
107	NESO should consider in more detail the relationship between interconnector de-rating factors and; i) the diurnal country demand profiles and the evolving role of DSR, ii) the installed storage fleets with profiles of their durations, iii) lagged correlations of residual demand between GB and neighbours, iv) the potential effects of greater use of voltage reductions (for example, flattening the peak to the trailing edge), which could all affect interconnector flows.	Recommendations (i) and (iii) were the key ones and very substantial progress has been made. However: (ii) remains important, including the MW for all durations and efficiencies iv) is on the edges of the PTE remit, since the LOLE metric includes Voltage Reduction. At the same time, the storage-voltage reduction complements in the leading and trailing edges of the peak may affect the storage effectiveness. Our view on this action remains unchanged.

127. As many of the previous recommendations before 2026 are still work-in-progress, the PTE would like to re-affirm the importance and priorities that should be given to these. Previously deferred items should continue to be reassessed until closed.
128. Regarding recommendation PTE 80, the future contingent T-4 auction procurement, NESO recognise that there are potential advantages in considering future contingency requirements beyond T-4 auction timeframes given the uncertainty in new technologies, growth in demand and potential for disruption as the energy system decarbonises. The PTE set out their view in recommendation PTE 80 of the 2023 report.⁵⁶ As a result, since 2024 NESO have provided an early, indicative view of the T-5 to T-8 requirements and they have developed this work more thoroughly in ECR 2026, specifically for T-5. The PTE is pleased to acknowledge this work and is of the opinion that whilst a formal

⁵⁶ [National Grid ESO Electricity Capacity Report 2023: findings of the Panel of Technical Experts.](#)

adjustment of the T-4 recommendation remains outside methodology, it is useful for the DESNZ Secretary of State to have sight of these prospects in the final determinations.

129. Regarding recommendation PTE 79⁵⁷ related to the vision of a hybrid LWR and stochastic risk analysis, we are pleased to see this remains under high priority active consideration by NESO, but note that, for various reasons during the past year, progress has been slow. The essence of the vision has been that elements that can be estimated statistically (e.g. demand, outages, weather) should be expressed as distributions, whilst distinct structural changes or special event risks (for example, major non-deliveries, Base Case alternatives) could remain in the LWR or treated as distinct scenarios for stress-testing. As yet, there is no overall clarity on a new framework and how new procurement recommendations would emerge from the quantiles of stochastic distributions rather than, or in conjunction with, a LWR criterion. Nevertheless, there have been some movements in this direction. Non-deliveries have been modelled statistically, and we note that in the demand forecasting, expert assessments of uncertainties for structural changes, as well as stochastic events, have been undertaken this year. With the move to FES scenarios, or pathways, being released at three-yearly intervals, the PTE recognises that this approach to creating uncertainty distributions around the Base Case, instead of the distinct scenarios, is now the default methodology and should be refined as such.
130. This has taken the methodology a long way in the move away from LWR to becoming fully stochastic. It does raise the important consideration of ensuring a robust and well-calibrated approach to the Base Case uncertainty, however, particularly with respect to accuracy of the P90 quantile assessment for peak demand. The sensitivities that remain in the LWR evaluation are now sparser and indeed appear to be candidates for statistical assessment, e.g. the weather-related risks. Furthermore, in ECR 2025 and ECR 2026, the inclusion of risk premia in the procurement targets, after the application of LWR, to maintain consistency with previous risk aversion in procurements, are indicative of the limitations of the sparser LWR approach. This need for a reconsideration of the procurement criterion is an inevitable consequence of a modelling transition away from an emphasis upon LWR towards an increased emphasis upon stochastic simulations around the Base Case. The PTE suggests that this implies a careful reconsideration and a more formal approach to LOLE risk that is in line with the established revealed preference of DESNZ.

Recommendation 113: NESO should continue to develop clarity on the evolution of the LWR methodology into becoming fully stochastic and, with DESNZ, as a consequence, consider a more formal approach to the use of risk quantiles and risk premia into the procurement criteria.

⁵⁷ [National Grid ESO Electricity Capacity Report 2023: findings of the Panel of Technical Experts.](#)

Conclusions on Target Capacities

131. Overall, the PTE note the continued improvement in methodology for producing the ECR and whilst we have, as usual, presented a number of recommendations, we hold the opinion that the work is comprehensive and thoroughly undertaken.
132. We have considered the target capacity recommendations by NESO and make the following recommendations:
- Regarding the T-1 recommendation for the 2027/28 Delivery Year by NESO of 5.0 GW in the ECR, we are comfortable with the analysis and its inclusion of a 0.4 GW risk premium above the LWR results to maintain a level of risk aversion consistent with previous Secretary of State determinations. This procurement includes a substantial provision for expected non-deliveries and, as usual, the PTE would suggest an autumn review with respect to new information, particularly on non-delivery risks.
 - Regarding the overall T-4 recommendation for the 2030/31 Delivery Year by NESO of 41.4 GW, we agree that this is appropriate according to the analysis in the 2026 ECR. This analysis has, for the first time, included a data-based expectation of the non-delivery which could occur between the outcome of the T-4 auction and the T-1 auction associated with the same delivery period. As this is a rational expectation of outcomes to which the T-1 analysis would have to adapt, it is in effect procuring the same volume earlier. The presumption is a net benefit from the potentially greater technology scope and liquidity available at T-4 compared to T-1. DESNZ may wish to maintain the rationale for this new non-delivery element, alongside their usual deliberations on T-1 set-aside, under review for cost effectiveness.

Quality Assurance

133. Previously followed procedures continue to provide quality assurance (QA) and these are closely aligned with DESNZ internal QA processes. The PTE previously requested details of the ECR Quality Assurance methodology and this was reproduced in Annex 2 of PTE's 2016 report.⁵⁸

⁵⁸ [Electricity Market Reform Panel of Technical Experts 2016 final report on National Grid's Electricity Capacity Report 2016](#).

This publication is available from: <https://www.gov.uk/government/publications/neso-capacity-report-2026-findings-of-the-panel-of-technical-experts>

Any enquiries regarding this publication should be sent to us at: pte@energysecurity.gov.uk

If you need a version of this document in a more accessible format, please email alt.formats@energysecurity.gov.uk. Please tell us what format you need. It will help us if you say what assistive technology you use.