Network Imperfections Charges
October 2025 – September 2026

and

Reforecast Report

October 2023 – September 2024

Decision Paper

SEM-25-053

11 September 2025

EXECUTIVE SUMMARY

This Decision Paper sets out the SEM Committee's Decision regarding the 2025/26 Network Imperfections Charges.

The purpose of this charge is for the TSOs to recover their forecast total costs associated with:

- managing the costs that arise given the transmission system (the wires) cannot deliver the efficient outcomes from the electricity market; and
- the operational requirements of the electricity system (e.g. minimum number of generating units on requirements, local Security of Supply (SoS) requirements in Dublin and Northern Ireland).

Network Imperfections Charges (which are sometimes called constraint costs in other jurisdictions or balancing costs in Great Britain)[1] ensure that the TSOs can recover the costs associated with addressing these network constraints and maintaining system security and are a key feature of the energy transition. Given the annual charge is based on a forecast, the overall charge for each year includes a K-Factor adjustment which adjusts the difference between forecast and actual costs in the preceding periods.

These charges across Europe have followed an increasing trend in recent years due to various changes in market conditions, including, inter-alia, significant increases in underlying wholesale energy prices (the cost of deviating from the market position increases as the cost of energy itself increases).

On 30th June 2025, the Regulatory Authorities (RAs) published a SEM Committee Consultation Paper, SEM-25-028 (the "Consultation Paper"), which considered the TSOs' submission in relation to their:

- 'Forecast Imperfections Revenue Requirement for Tariff Year 1st October 2025 to 30th September 2026';

[1]NESO, the Energy System Operator in Great Britain, publish detailed weekly updates of the balancing costs in Great Britain https://www.neso.energy/industry-information/balancing-costs

- 'Imperfections K-factor Submission' and
- 'Reforecast Report for Tariff Year 1st October 2023 to 30th September 2024'.

For Tariff Year 2025/26, the Transmission System Operators (TSOs) forecast total Network Imperfections Costs to be €699.81 million. With the addition of the forecast significant K-Factor of €183.43 million, the total estimated Network Imperfections Charges which the TSOs sought was €883.24 million. This forecast representsed a 56% (+€316.03 million) increase from the €567.21 million allowed for Tariff Year 2024/25[2].

The K-Factor adjustment of €183.43 million for inclusion in the Tariff Year 2025/26 Network Imperfections Charge compares to the negative K-factor adjustment of -€66.41 million (an over-recovery) for Tariff Year 2024/25.

The estimated costs associated with the within year (2024-25) K-Factor is one of the main significant price drivers due to the significant difference between the original forecast and out-turn actual costs for the first 7.5 months of the 2024/25 Tariff Year. The TSOs project that €167.06 million will be required for the 2024/25 K-Factor. [3].

In the consultation (SEM-25-028), which was open from 30th June to 25th July 2025, the SEM Committee sought stakeholders' views of the following:

- The TSOs' forecasts of costs and assumptions for Tariff Year 2025/26. In particular, stakeholders' views of the inclusion of the following costs:

i. The costs attributed to Generator Outages (€75m);

ii. The potential payments to participants under Article 13 of Regulation (EU) 2019/943 (€91m). The €91 million provision is comprised of:
   - o €54 million for an under-estimation of the potential payments for 1st January 2020 – 30th September 2025; plus
   - o €37 million forecast costs attributable to Tariff Year 2025/26.

[2] The TSOs' original submission for Tariff Year 2024/25 was €592.02 million, reference SEM-24-064.

[3] The TSOs forecast demand for the 2025/26 tariff year is 39,650 GWh, which represents a 2% increase from the 2024/25 forecast demand of 38,800 GWh.

- The TSOs' standard and frequency of reporting Network Imperfections Costs and drivers;
- Potential actions the TSOs/RAs could take to minimise Network Imperfections Charges (€699.81m) for the upcoming tariff year;
- Potential actions the TSOs/RAs could take to minimise Network Imperfections Charges in the medium to long term timeframe;
- Whether the K-factor element (€183.43m), which is projected to be significantly greater for Tariff Year 2025/26 than in previous Tariff Years should be partially recovered over one or more Tariff Year and, if so, at what quantum.

The RAs received eleven responses to the Consultation Paper. During the consultation period, the RAs conducted further analysis of the TSOs' submission and queries were sent to the TSOs. This exercise resulted in the TSOs re-running their model and consequently submitting updated forecast costs to RAs on 25th August, reducing costs overall by €35.6 million. Regarding the costs associated with Article 13 of Regulation (EU) 2019/943, the SEM Committee have decided not to collect the TSOs' under-estimation of the potential payments for 1st January 2020 – 30th September 2025 (a reduction of €54 million) but to include the TSOs' forecast of costs attributable to Tariff Year 2025/26, amounting to €37 million; further information can be found in Section 3. Furthermore, the SEM Committee has decided to discount pumped storage costs by €3.4 million. Taken together, such decisions reduced overall Network Imperfections Costs by €93 million (13%) from €883.24 million to €790.24 million, giving a Network Imperfections Tariff of €19.93/MWh, as shown in Table 1 below.

	SEMC Decision Tariff Year 2025/26	TSOs Proposed Costs Tariff Year 2025/26	Difference	Difference %
Total Costs (incl. Art. 13 of Reg (EU) 2019/943)	€606.81	€699.81m	-€93m	-13%
K-factor	€183.43m	€183.43m	-	-
Total Network Imperfections Costs	€790.24	€883.24m	-€93m	-11%
Network Imperfections Price (€/MWh) [4]	19.93	22.28	-2.35	-11%

Table 1: 2025/26 SEMC Decision Network Imperfections Costs compared to TSO submitted Network Imperfections Costs

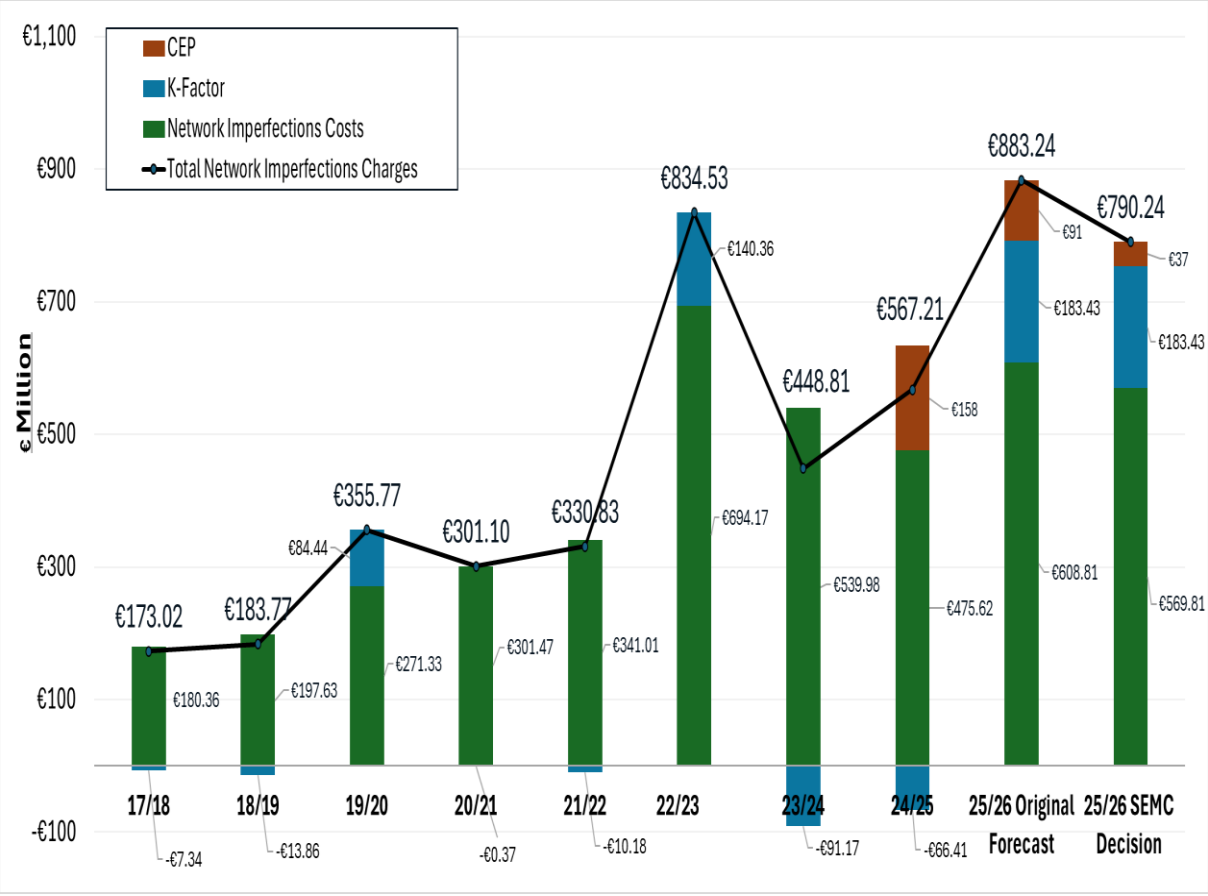

Figure 1: Historic Trend Comparison of Imperfections Charges

[4] Based on estimated metered demand 39,650 GWh in the SEM for 2025/26, as estimated by the TSOs

Suppliers pay Network Imperfections Charges to the TSOs. It is at the Suppliers' decision as to how much, if any, they pass on their customers. If the suppliers passed on the entirety of this increase to consumers, this would increase the monthly bill in Northern Ireland by £1.26 and would increase the monthly bill in Ireland by €1.84 in Ireland. Table 2 below outlines the potential consumer impact of the 2025/26 TSOs' original proposed costs and the SEM Committee's approved costs versus the 2024/25 approved costs.

	Aggregate Network Imperfections Charge (€m)	Network Imperfections Price (€/MWh)	EAB – IE (€)	Monthly – IE (€)	EAB – NI (£	Monthly – NI £
Original Forecast Proposed by TSOs in 25/26	**883.24**	22.28	93.56	7.80	61.45	5.12
SEMC Decision in 25/26	**790.24**	19.93	83.71	6.97	55.94	4.66
SEMC Approved Tariff Year 24/25	**567.21**	14.62	61.51	5.13	40.75	3.40
Difference between 25/26 & 24/25 Approved Costs	**+223.03**	+5.31	+22.20	+1.84	+15.19	+1.26

Table 2: Potential Consumer Impact of SEMC's approved Network Imperfections Charge in 2025/26

The SEM Committee emphasises it is acutely aware of the impact of such costs on consumers and the SEM RAs and TSOs have been engaged in a number of actions to help mitigate/control these costs. Some of these actions relate to the following:

- **North South Interconnector (NSIC);**
- **Action Plan on Dispatch Down;**
- **Network investment;**
- **Bidding rules**;
- **All Island Programme**;

- **Quality of reporting of constraints and curtailment**;
- **TSO Operational roadmap**; and
- **Incentives**.

Further information can be found in Section 3.3.

A summary of the SEM Committee's decisions are outlined below:

1. The Tariff Year 2025/26 Network Imperfections Charge will be €790.24 million, compared to the TSOs' original submission of €883.24 million.

2. The €183.43 million K-Factor adjustment will be applied in full and wholly recovered in Tariff Year 2025/26.

3. The TSOs' provision of costs associated the Article 13 of Regulation (EU) 2019/943 forecast for Tariff Year 2025/26, amounting to €37 million will be included, compared to the TSOs' original submission of €91 million.

4. The Imperfections Price charged to suppliers is €19.93/MWh.

5. The Imperfections Charge Factor (FCIMPy) will be set to 1 for the period of 1 October 2025 to 30 September 2026, subject to any alterations following the Mid-Year Review process.

6. The RAs will continue to work with the TSOs to review and improve Imperfections forecasting, application and reporting (including the Mid-Year Review[1] report and a Consumer Impact Assessment)), with the objective of increasing transparency and lowering consumer costs.

Table of Contents

1. INTRODUCTION

This paper sets out the SEM Committee's decision on the Tariff Year 2025/26 Network Imperfections Charge and Network Imperfections Price.

Under the Trading and Settlement Code, Network Imperfections Charges are levied on the Loss-adjusted Metered Quantities of Supplier Units. These charges are intended to recover the expected cost of Dispatch Balancing Costs (DBCs), Fixed Cost Payments and Charges, and any other imbalances between Trading Payments, Trading Charges, Capacity Payments and Capacity Charges in the upcoming Tariff Year.

DBCs form the largest component of Network Imperfections costs, and result from network constraints and the resulting compensation paid to generators for re-dispatch. These costs result from a combination of offer and bid prices of the re-dispatched generation, and the volumes of re-dispatched generation, resulting from how successfully the TSOs manage network constraints.

Section F.12 of the Trading and Settlement Code[5] requires SEMO to propose values, for approval by the RAs, of the Network Imperfections Price (PIMPy) and Network Imperfections Charge Factor (FCIMPy), which are used in the calculation of Network Imperfections Charges. The Trading and Settlement Code also requires that SEMO sets out relevant research and analysis justifying the values proposed.

A key driver of the increase observed in the TSOs proposed Network Imperfections Charges for Tariff Year 2025/26 is the TSOs' K-Factor adjustment (€183.43 million). The estimated costs associated with the within year (2024-25) K-Factor (€167.06 million) is the main influence due to significant difference between the original forecast and out-turn actual costs for the first seven and a half months of the 2024/25 Tariff Year. The TSOs state the challenges encountered in satisfying the Northern Ireland (NI) Security of Supply

[5] See Trading and Settlement Code Part B, April 2017

dynamic stability requirements are the primary contributory cost driver of the under-recovery of costs incurred within Tariff Year 2024/25.

The inclusion of a provision for potential payments to market participants under Article 13 of Regulation (EU) 2019 / 943 was another key driver of forecast costs (€91 million). The TSOs also identified Updated Renewable Energy Sources (RES) and interconnector capacities, Forecast Generator Outages, Transmission Outages and Generator Portfolio Updates as having an inflationary impact on their forecast Network Imperfections Charges for Tariff Year 2025/26 by comparison to actual costs incurred in 2023/24.

The RAs appointed NERA Economic Consultants to assist with their review of the TSOs' submission. Following the process, NERA provided the RAs with recommendations of different measures the TSOs can take in the future to improve the accuracy of their forecasting and reporting of Network Imperfections Charges. The recommendations are summarised in Section 4 below. The RAs and NERA engaged with the TSOs regarding aspects of the submission. The TSOs' responses to such queries are also outlined within Section 3.

The SEM Committee notes the increasing trend in Network Imperfections Charges is not just unique to SEM, it is observed across Europe. These costs, which arise from the need to balance supply and demand in real-time, have been driven by several factors, including the integration of renewable energy sources and the variability they introduce. For instance, in Great Britain, balancing costs continue to trend upwards, with costs in Financial Year (FY) 2024/256 more than doubling (108% increase) since FY2021/22. Similarly, in Germany, the costs associated with balancing the grid have also risen. In 2023 the total costs for redispatch measures had increased by more than two and a half times when compared with 2021 costs[6].

[6] https://www.cleanenergywire.org/news/grid-operators-recommend-splitting-german-power-price-zone-industry-disagrees

2. OVERVIEW OF TSOS' TARIFF YEAR 2025/26 NETWORK IMPERFECTIONS CHARGE SUBMISSION

The TSOs forecast an Imperfections Cost of €699.81 million for Tariff Year 2025/26 (includes a €91 million provision for potential payments associated with Article 13 of Regulation (EU) 2019/943). With the addition of the positive K-factor element of €183.43 million, the TSOs proposed a total Network Imperfections Charge of €883.24 million, equivalent to a Network Imperfections Price of €22.28/MWh[7]. This represents a 56% increase from the €567.21 million of total Network Imperfections Charges allowed for Tariff Year 2024/25.

Following detailed consideration of the TSOs' submission, the SEM Committee has decided to disallow €93 million of the TSOs' submitted Network Imperfections Costs. This brings the total down to €790.24 million. The reduction is in relation to the SEM Committee's decision to not at this time seek to collect the TSOs' under-estimation of the potential payments for 1st January 2020 – 30th September 2025 attributed to Article 13 of Regulation (EU) 2019/943, amounting to €54 million; and the revising downward of costs associated with Transmission Outages (€36 million), Reserve Calculation (€6 million), Security and Operational Constraints (€8.6 million), and the Dispatch of Pumped Storage units (€3.4 million) plus the revising upwards of costs associated with Northern Ireland RES capacity (€15 million). Further information can be found in Section 3.

2.1 DISPATCH BALANCING COSTS (DBCs)

DBCs include Constraint Costs, Uninstructed Imbalance Payments and Generator Testing Charges. Such costs contributed to the majority of the TSOs' forecast costs for Tariff Year 2025/26[8].

[7] Based on a TSO estimated total demand of 39,650 GWh in the SEM for 2025/26, as forecast by SEMO.
[8] In order to increase transparency regarding DBCs, the SEM Committee has introduced reporting requirements on the TSOs. The TSOs provide quarterly updates on the levels of Constraint Costs, drivers behind Constraint Costs, mitigating measures being taken and other information or commentary that the TSOs believe will aid transparency in this area. These Quarterly Imperfections Costs Reports are available on EirGrid's and SONI's websites.

2.1.1 DBC - CONSTRAINT COSTS

Constraints costs arise when a TSO instructs one or more generators to deviate from their intended generation schedules to manage issues such as limitations in the transmission system's capacity to transmit power. The TSOs are required to compensate generators for deviating from their generation schedules, in accordance with Offer Prices and Bid Prices for each generator.

The TSOs forecast Constraint Costs for the upcoming Tariff Year, using a combination of a PLEXOS model and supplementary modelling. The TSOs estimate 'PLEXOS Modelled Constraints' at €529.56 million compared to €448.71 million for Tariff Year 2024/25. The TSOs' Take One Out at a Time (TOOT) analysis shows Interconnector flows and RES Capacity Updates (combined) have the greatest inflationary impact on their modelled costs (see Figure 2).

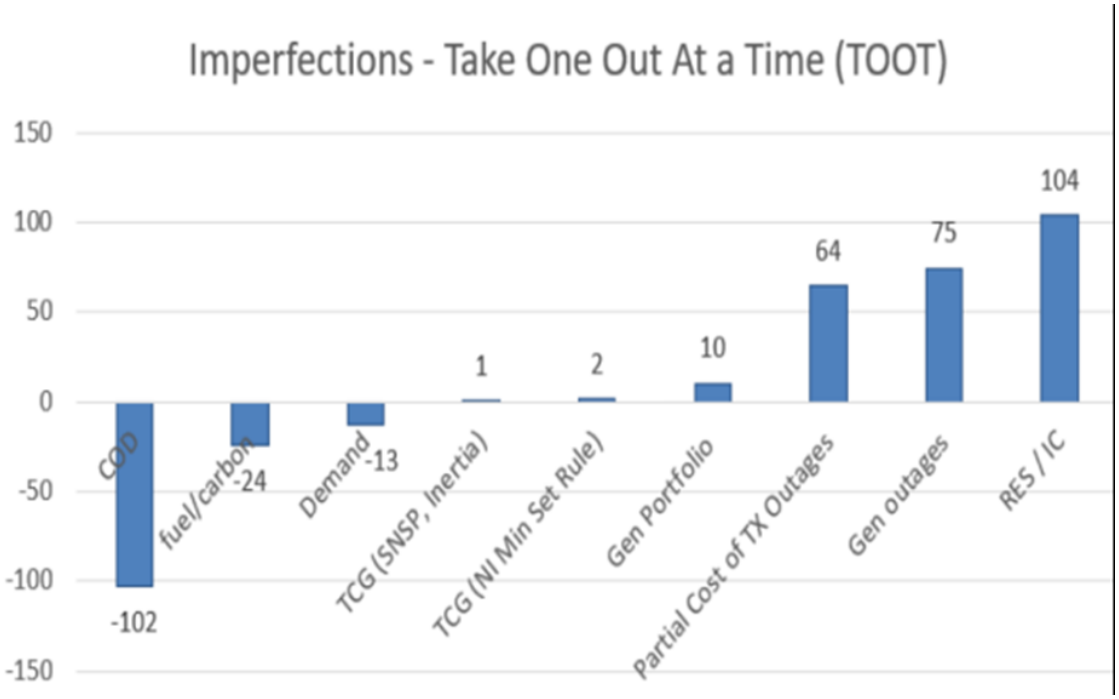

Figure 2. The key drivers of the change in the TSOs' 2025/26 PLEXOS Network Imperfections Costs relative to the TSOs' back cast findings from Tariff Year 2023/24 (ref. TSOs' Network Imperfections Charges Forecast Tariff Year 2025/26 report)

'Supplementary Modelled Constraints' are costs not captured in the TSOs' PLEXOS modelled costs. For Tariff Year 2025/26, the TSOs forecast the supplemental modelled

costs to be €79.25 million, 53% higher than the previous tariff year's forecast of €51.72 million.

For Tariff Year 2025/26, these Constraint Costs comprise of the forecast DBC, with Uninstructed Imbalances and Testing Charges forecast at zero (see Sections 2.1.2 and 2.1.3).

2.1.2 DBC - UNINSTRUCTED IMBALANCES

Uninstructed Imbalances occur when a generator deviates from the output it has been instructed by the TSOs to generate at. To balance the system the TSOs must redispatch other generators which incurs additional costs. The forecast for Uninstructed Imbalances is zero in the TSOs' Network Imperfections Charges submission for Tariff Year 2025/26 as it is assumed that any resulting undelivered quantities are settled at the imbalance settlement price.

2.1.3 DBC - TESTING CHARGES

As a testing generator unit typically poses a greater risk of tripping, additional operating reserve is required to ensure system security is not compromised, giving rise to increased system operating costs. The TSOs have not included specific DBC provisions for new units that will be under test before they are commissioned or units returning from a significant outage. The TSOs assume that testing charges will offset the additional DBC incurred and will primarily consist of constraints, due to out-of-merit running. However, the TSOs add that due to the difficulty in forecasting, testing charges do not cover any transmission related constraints that arise due to new unit commissioning. There is no provision included in the TSOs' forecast for any future changes.

2.2 FIXED COST PAYMENTS

Fixed Cost Payments comprise Make Whole Payments, Recoverable Start Up Costs and recoverable No-Load Costs. The TSOs have assumed that these costs have been largely estimate within the PLEXOS Model and no provision is included in their forecast.

2.3 OTHER SYSTEM CHARGES

Other System Charges (OSC) include Generator Performance Incentive Charges, Short Notice Declaration Charges and Trip Charges. OSC are charges levied outside the SEM by the TSOs. The TSOs did not include a provision for OSC for Tariff Year 2025/26.

2.4 ARTICLE 13.7 COSTS

A significant cost driver in the TSOs' 2025/26 Network Imperfections Charges Forecast is the inclusion of a provision for potential payments to market participants under Article 13 of Regulation (EU) 2019 / 943 (€91 million).

For context, the SEMC Decision (SEM-22-009) was challenged in the High Court in two sets of proceedings and judgment, covering both proceedings, was delivered on 10 November 2023 (the "First High Court Judgment"); a further judgment was delivered on 1 July 2024 (the "Second High Court Judgment"); and an ex tempore ruling delivered on 10 July 2024 (together the "High Court Judgments"). The High Court quashed the SEMC's decision and made various declarations, with a stay placed on the High Court orders until the Hearing of the appeal. The CRU, as the Respondent, issued appeals in both cases on 8 August 2024. The matter was heard by the Supreme Court in December 2024, and the Court made a preliminary reference to the Court of Justice of the European Union ("CJEU"). After the CJEU has delivered its judgment, the case returns to the Irish Court, which must apply the CJEU's judgment to resolve the case before it. The matter is expected to return to the Supreme Court for their consideration in 2026.

The TSOs seek a provision of €91 million for potential payments to participants under Article 13 of Regulation (EU) 2019/943. The €91 million provision is comprised of;

- €54 million for an under-estimation of the potential payments for 1st January 2020 – 30th September 2025; plus
- €37 million forecast costs attributable to Tariff Year 2025/26.

The TSOs state a provision is sought to ensure sufficient funding is in place to meet any potential future obligations that may arise, without prejudice to the ongoing judicial review

process. In 2024/25, the SEM Committee decided to include the potential costs associated with the High Court Judgments of €158 million in the Network Imperfections Charge. The €158 million was comprised of €149 million attributed to estimated costs incurred between 1st January 2020 and 30th September 2024 plus €9 million attributed to forecast costs for Tariff Year 2024/25.

2.5 K-FACTOR

The K-factor has two parts: the actual under or over-recovery for the previous Tariff Year (2023/24), and a within-year estimated under or over-recovery for the current Tariff Year (2024/25). The SEM Committee has decided that the total €183.43 million K-Factor adjustment, which includes the €167.07 million within year under recovery amount, will be applied in full and wholly recovered in Tariff Year 2025/26.

Differences between Network Imperfections Costs and Network Imperfections Charges paid by suppliers lead to a surplus or shortfall over the Tariff Year. The TSOs refund any surplus or recover any shortfall through an adjustment to the Network Imperfections Price in the following Tariff Year. Table 3 shows the TSOs submitted actual K-factor for Tariff Year 2023/24 and their within-year forecast for 2024/25.

Item	€ million
Actual under-recovery in 2023/24	(16.37)
Estimated under-recovery 2024/25	(167.06)
Total K-factor to be applied in 2025/26	**(183.43)**

Table 3. TSOs' K-factor calculation for 2025/26

In its Decision Paper for Tariff Year 2024/25, the SEM Committee approved the TSOs' forecast over recovery for 2023/24 of €88 million[9]. This was the TSOs' then within-year

[9] Reference Decision Paper: SEM-24-064

K-factor estimation. The actual K-Factor over-recovery arising for the 2023/24 year was €71.63m. Therefore, the actual outturn K-Factor arising from Tariff Year 2023/24 was an under-recovery of €16.37 million.

For the within year K-factor estimate, in the current Tariff Year, i.e. Tariff Year 2025/26, the TSOs propose an under recovery of €167.96 million. The K-Factor calculation is based on the actual outturn Network Imperfections Costs for the first seven and a half months (i.e. 1 October 2024 to 10 May 2025), plus an estimate for the remaining four and a half months (i.e., 11 May 2025 to 30 September 2025). This results in the TSOs' total estimated K-Factor under-recovery position proposed of €183.43 million. The TSOs state the primary contributory factor of the under recovery is the challenges encountered in satisfying the Northern Ireland (NI) Security of Supply dynamic stability requirements.

2.6 DEMAND SIDE UNITS (DSUs)

The TSOs have excluded costs associated with DSU Energy Payments from their 2025/26 forecast submission. The TSOs attribute this *"as there was not enough information available to quantify*" the impact. The TSOs add it is not yet clear when any proposed changes will be operational within the 2025/26 Tariff Year. As there was not enough information available to quantify this impact it was thus excluded, noting that there is scope for an impact on Network Imperfections Costs depending on implementation timelines. The provision of costs associated with DSU payments was also removed from the TSOs' forecast of Network Imperfections Charges for Tariff Year 2024/25.

3. KEY COMMENTS RECEIVED

In the Consultation Paper, the RAs sought stakeholders' views of the following:

- The TSOs' forecasts of costs and assumptions for Tariff Year 2025/26. In particular, stakeholders' views of the inclusion of the following costs:
  i. The costs attributed to Generator Outages;
  ii. The potential payments to participants under Article 13 of Regulation (EU) 2019/943;
- The TSOs' standard and frequency of reporting Network Imperfections Costs and drivers;
- Potential actions the TSOs/RAs could take to minimise Network Imperfections Charges for the upcoming tariff year;
- Potential actions the TSOs/RAs could take to minimise Network Imperfections Charges in the medium to long term timeframe;
- Whether the K-factor element (€183.43m), which is projected to be significantly greater for Tariff Year 2025/26 than in previous Tariff Years should be partially recovered over one or more Tariff Year and, if so, at what quantum; and
- The RAs received eleven consultation responses. One respondent provided a confidential version alongside a redacted, non-confidential version for publication purposes. Table 4 below lists the respondents. Their submissions can be found appended to this Decision Paper.

Respondent	
Bord Gáis Energy	Flogas
Electricity Association of Ireland	iPower
Electric Ireland	Net Zero Energy
Energia	Power NI
EPUK	EirGrid & SONI
Federation of Energy Response Aggregators	

Table 4: List of respondents

The comments received are categorised as follows:

- **Section 3.1:** outlines the comments received regarding the proposed K-factor adjustment (€183.43m), and whether it should be partially recovered over one or more Tariff Year(s).
- **Section 3.2:** focuses on the comments received regarding the potential payments to participants under Article 13 of Regulation (EU) 2019/943;
- **Section 3.3:** provides an overview of the feedback received regarding the potential actions the TSOs/RAs could take to minimise Network Imperfections Charges (€699.81m) for the upcoming tariff year and in the medium to long term timeframe;
- **Section 3.4:** details stakeholder's feedback of the TSOs' modelling and forecasting of Network Imperfections Costs;
- **Section 3.5**: outlines the comments received regarding the individual price drivers of Network Imperfections Charges and the impact on the consumer;
- **Section 3.6:** focuses on comments received regarding the TSOs' standard and frequency of reporting and the transparency of Network Imperfections Costs and drivers; and
- **Section 3.7**: outlines the feedback received regarding the exclusion of costs attributed to Demand Side Units (DSU) energy payments.

3.1 PARTIAL DEFERRAL OF THE K-FACTOR

The Consultation Paper requested stakeholders' comments on whether the K-factor element (€183.43 million), which is projected to be significantly greater for Tariff Year 2025/26 than in previous Tariff Years, should be partially recovered over one or more Tariff Year and, if so, at what quantum.

Comments Received

Five respondents provided feedback to the consultation question on potentially spreading the K-Factor recovery over subsequent Tariff Years. Responses received contained divergent views.

Most respondents noted the significance of the K-Factor. Three respondents suggested it would be more appropriate to spread the recovery over two or more tariff periods. Bord Gáis Energy suggested the recovery of costs over one year is inappropriate. Flogas noted it represents significant volatility for suppliers and consumers. Power NI suggested a phased recovery should be applied to provide customers with the best value as possible given high-cost pressures that exist. Bord Gáis Energy called for price shock mitigation measures to be introduced, for example, a five-year K-Factor recovery could be introduced to mitigate consumer exposure to year-on-year price shocks. However, Power NI cautioned that spreading the K-Factor carries a risk that Network Imperfections Costs could continue to be charged at a high level for a longer period of time.

A number of respondents referred to Constraint costs in Northern Ireland and noted mitigations such as the installation of the second North South Interconnector will be key to addressing these issues.

Three respondents (Bord Gáis Energy, Flogas and the TSOs) commented on the Network Imperfections Charges Mid-Year Review process. Bord Gáis Energy reiterated their support of the SEM Committee's Decision to not approve the TSOs' request of a mid-year adjustment (SEM-25-025) and to ask the TSOs to review the adequacy of their Market Working Capital Credit Facility. Bord Gáis Energy noted the fund should be explored as a means to protect consumers from Network Imperfections price volatility and requested the SEM Committee to provide an update if the assessment is complete and the potential next steps. Flogas suggested the SEM Committee's Decision (SEM-25-025) emphasises the need for a more measured and consumer sensitive recovery approach. The TSOs referred to their previous request to RAs to implement a mid-year adjustment to the Network Imperfections Charge Factor. The TSOs suggested the SEM Committee's explanation of deciding not to implement an adjustment mid-year is unclear.

One respondent (the TSOs) strongly opposed the proposal for a multi-year recovery of the K-Factor, and said it is a "*key principle of SEM funding that the best estimate of the k-factor would be recovered in the following year".* The TSOs referred to the SEM Committee's previous decision to not defer a K-Factor as a "*deferral could cause significant future k-factors which could negatively impact suppliers and consumers"* (SEM-22-045). The TSOs added it is unclear where in Trading and Settlement Code the deferral of any portion of costs is provided for and cautioned that it could lead to a situation whereby customers have increased Network Imperfections Costs due to compounding K-Factors. The TSOs consider it essential that the full value of the K-factor is provided for in the final approved costs.

RAs' Response

As a result of the significant K-Factor under recovery amount proposed by the TSOs for Tariff Year 2025/26, the subsequent impact on suppliers and consequently, consumers, the RAs considered the possibility of partially recovering the K-Factor over one or more Tariff Year.

With regard to respondents' comments regarding the costs associated with Northern Ireland's constraints and the impact on the K-factor, the RAs recognise that the delivery of the North South Interconnector will be beneficial to security of supply. There is an ongoing trial being conducted by the TSOs on the minimum number of generators constraint to determine whether any enduring changes can be made.

SEM Committee Decision

The SEM Committee acknowledges the various comments made by stakeholders. In response to a request for an update of the review of the Market Working Capital Credit Facility, on 10th June 2025, the SEM Committee issued correspondence to the TSOs and formally requested the TSOs to conduct such review as a matter of urgency. The review would protect the public's best interests and ensure consumers are protected from any unforeseen increases in their electricity bills mid-year, as well as protecting market participants from unforeseen cash flow challenges. The SEM Committee intends to request an update from the TSOs of the status of such review.

The SEM Committee has decided not to defer recovery of the Network Imperfections Charge K-Factor for Tariff Year 2025/26. Deferring these costs would likely result in larger K-Factors in subsequent years, with potential adverse effects on both suppliers and consumers. While the scale of the proposed deferral warranted stakeholder consultation, the SEM Committee maintains its position, as set out in SEM.

3.2 THE TSOs' PROVISION FOR POTENTIAL COSTS ASSOCIATED WITH ARTICLE 13 OF REGULATION (EU) 2019/943

A significant driver in the proposed forecast Network Imperfections Charges for Tariff Year 2025/26 is the inclusion of a provision for potential payments to market participants under Article 13 of Regulation (EU) 2019/943. The TSOs forecast the potential costs associated with the TSOs' interpretation of the recent High Court Judgments is €91 million. The Consultation Paper requested stakeholders' comments on the TSOs' potential costs associated with Article 13 of Regulation (EU) 2019/943.

Comments Received

Four respondents provided divergent views on the provision of costs associated with Article 13 of Regulation (EU) 2019/943.

Two respondents (Flogas and Electric Ireland) suggested an alternative approach should be considered. Flogas suggested the costs are premature and referred to the ongoing legal process. Flogas also stated that there is a lack of transparency of how the payments were estimated. Flogas emphasised that until there is legal clarity provided, such provisions should be removed. If the costs are approved in the future, they proposed it is spread over five years to minimise the impact on end consumers. Electric Ireland emphasised that the recovery of costs is based on *compensation" up to market price level*" and they suggested the legal process' interpretation of this phrase is not finalised. however, the TSOs' submission assumes an interpretation of the phrase given the expectation of costs. Electric Ireland requested that if RAs continue to ringfence monies

associated with Article 13 of Regulation (EU) 2019/943, the interpretations and reason for adopting such an approach should be set out in the Decision Paper. Furthermore, Electric Ireland suggest the TSOs' estimated €54 million 'under estimation' of costs is invalid as the outcome of the legal proceedings is unknown. Electric Ireland urged the RAs to adopt a less pessimistic approach until a definite legal judgment is available.

Bord Gáis Energy considers it appropriate to include the provision of costs as future consumers are not potentially penalised for benefits received by current consumers. The TSOs clarified the request for an additional cost provision of €91 million is sought to ensure sufficient fundings are in place to meet any potential 2020-2026 liabilities, without prejudice to the ongoing judicial review. They further state that no payments would be made until the legal process is finally concluded. The TSOs note there is a regulatory approved calculation methodology and mechanism in place.

RAs' Response

The RAs acknowledge the comments made by market participants regarding the TSOs' potential costs associated with Article 13 of Regulation (EU) 2019/943. Cognisant of the comments made, the CRU, as the Respondent, has issued appeals in both cases on 8 August 2024. The matter was heard by the Supreme Court in December 2024, and the Court made a preliminary reference to the Court of Justice of the European Union ("CJEU"). After the CJEU has delivered its judgment, the case returns to the Irish Court, which must apply the CJEU's judgment to resolve the case before it. The matter is expected to return to the Supreme Court for their consideration in 2026. The RAs note there is a tacitly agreed upon approach in place with the TSOs regarding the calculation of payments.

SEM Committee Decision

As discussed in the SEM Committee's decision on Network Imperfections Charges for Tariff Year 2024/25 (SEM-24-064), the SEM Committee included a provision of €158 million to cover potential payments to market participants associated with Article 13 of Regulation 2019/943. The SEM Committee considered including a provision in 2024/25

was in the best interests of consumers to limit the potential future impact on consumers in future years.

However, for the year 2025/26, the SEM Committee considers that forecast Network Imperfections Costs are at an exceptionally high level already, before the addition of a provision for Article 13 costs. Hence, the SEM Committee considers that limiting the impact on consumers in future years by including the full provision for Article 13 costs would impose an even less desirable impact on consumers in Tariff Year 2025/26. Accordingly, without prejudice to the ongoing legal proceedings, the SEM Committee has decided to fully recover the provision of costs associated with Article 13 in Tariff Year 2025/26 and are not at this time seeking to collect the TSOs' under-estimation of the potential payments for 1st January 2020 – 30th September 2025, amounting to €54 million. For clarity, the SEM Committee has included the TSOs' forecast of costs attributable to Tariff Year 2025/26, amounting to €37 million. The SEM Committee emphasises that by not seeking to recover the TSOs' under-estimation of the potential payments for 1st January 2020 – 30th September 2025, such costs may potentially have to be recouped in subsequent Tariff Years, pending the outcome of the legal proceedings.

3.3 ACTIONS THE TSOS AND/OR RAS COULD TAKE TO MINIMISE NETWORK IMPERFECTIONS CHARGES IN TARIFF YEAR 2025/26 & IN THE MEDIUM TO LONGTERM

The RAs requested stakeholders' comments on potential actions the TSOs/RAs could take to minimise Network Imperfections Charges for the upcoming tariff year and in the longer term. The Consultation Paper also requested comments from stakeholders of a potential way to reduce Network Imperfections Costs in the future (relative to what they would otherwise be) by modifying the Trading and Settlement Code so that only those units dispatched away from their Final Physical Notification (FPN) by the TSO for balancing energy reasons would be settled at the imbalance price. Units dispatched away from their FPN by the TSO for non-energy reasons, such as to meet a system constraint, would be settled on their complex Commercial Offer Data (COD) only.

Comments Received

The majority of respondents provided comments on potential actions the TSOs could take to minimise Network Imperfections Charges for the upcoming tariff year and in the medium to long term timeframe. Six respondents provided feedback on the suggested proposal to modify the Trading and Settlement Code.

Five respondents opposed the suggested modification to the Trading and Settlement Code. Some respondents stated it would represent a fundamental change to the SEM's design and should not be considered as a measure to decrease Network Imperfections Costs. Bord Gáis Energy and Energia stated the proposal would negatively affect investor confidence. The Energy Association of Ireland strongly opposed the suggestion and suggested it would prevent participants providing system critical balancing services from receiving the imbalance price that reflects the value of their actions. Energia also strongly opposed the proposal and suggested it was not a targeted and proportionate response to increasing Imperfection Costs, rather, it would displace valuable time and resources from implementing system actions that have already been identified that are required to reduce constraints.

EPUK noted their transparency and practicality concerns of the proposal. They emphasised a consultation, impact assessment and Cost Benefit Analysis of any proposed changes is required and questioned the fairness of the proposal. EPUK further added the proposal undermines the incentive of the TSOs to address system constraints timely and efficiently, and the proposal addresses a symptom not the cause of Network Imperfections Costs.

Another respondent (Electric Ireland) welcomed the RAs consideration of enhancements to bidding rules and suggested consideration should be given to the current market rules, if they are supportive of solving the underlying issues associated with high levels of renewables and not enough demand to absorb the supply. Electric Ireland also suggested the structure of the Network Imperfections Charge applied to suppliers should be considered, adding that the current format of the charge is applied in every hour, regardless of system conditions. Electric Ireland suggested changing to Time of Use

format could help incentivise an increase in renewable use when output is high and demand is low, and this could also move demand away from peak hours.

Energia emphasised it is crucial the System Operators (SOs) have strong incentives to reduce Network Imperfections Costs and suggested incentives under the Price Control framework are insufficient. The Electricity Association of Ireland suggested incentives for the TSO to reflect their primary responsibility for reducing Imperfections Costs. Energia and the Electricity Association of Ireland noted their support of the delivery of Northern Ireland's Dispatch Down Action Plan and requested EirGrid produce a similar plan for Ireland. Energia also referred to the 'Shaping our Electricity Future' and 'Operational Constraints Roadmap 2025-2035' reports and emphasised the need for the timely implementation of measures in the reports. EPUK referred to CRU's PR6 framework and the TSOs' performance incentives and they welcomed the network 'imperfections and constraints' incentive. They note Network Imperfections Costs are included in SONI's workplan however not as a performance issue. EPUK believe Network Imperfections related incentives should be outcome based whereby total Network Imperfections Costs should be linked to the assessment of performance as this would result in a strong incentive for TSOs to manage constraint costs.

Bord Gáis Energy stated the primary way for the TSO to decrease Dispatch Balancing Costs is to invest in the grid. They requested a transparent grid development plan for the Southeast region and suggested the Celtic Interconnector will escalate grid constraints in the Southeastern corridor. They also requested RAs to publish a 'Powering up Cork' plan to outline grid challenges in Southeast and define planned mitigation measures and timelines. The Electricity Association of Ireland suggested to ensure SOs are efficiently funded to enhance the grid for times of extreme weather events. They also proposed the following actions to reduce Network Imperfections Costs; Accelerated integration of constraint reducing technologies via market enhancements and route to market supports (e.g. synchronous condensers) and the roll out of hybrid sites and private wires to optimise renewable generation. EPUK suggested the TSOs have failed to deliver critical infrastructure to decrease Dispatch Balancing Costs. Although another respondent (Flogas) welcomed the RAs focus on longer term solutions, they stated that the market

suffers from structural problems that are driving Network Imperfections Costs. They stressed the urgency of delivering system investments such as the North-South interconnector, citing their direct impact on reducing constraint costs and improving dispatch efficiency.

Net Zero Energy suggested the consultation fails to focus on how to mitigate the need to constrain fossil fuelled units to stabilise the grid. They were critical of the lack of detail of the mitigation plans and note that EirGrid's multiyear plan fails to have targets/metrics for success. Furthermore, Net Zero Energy suggest actions by the SOs, and RAs are not being progressed with the speed warranted and a suggested a solution to removing Network Imperfections Costs by using only proven technology. They also requested SEMC to provide a more comprehensive analysis of the mitigation options for Network Imperfections Costs and enhance EirGrid's Multi Year plan to include targets for Network Imperfections costs and emission reductions.

The TSOs note they have submitted requests for additional funding to mitigate Imperfection Costs and suggested the timely and full approval of resource requests would enable work to progress quicker and deliver benefits to consumers. They note their intentions to continue to work with the SEM Committee and the All-Island Programme of work, adding that programmes such as FASS and aspects of Scheduling and Dispatch Programme will have a positive impact on Network Imperfections Costs, however, they emphasise it is not definitive that all measures will be downward drivers. The TSOs also outlined longer term actions being taken to reduce Network Imperfections Costs including, the Operational Policy Roadmap, SONI's funding request to UR for the first phase of a proposed Operational Tools and Capability Enhancement work package, a similar fund submission made under the Power Systems Capability Enhancement programme by EirGrid, and the North South Interconnector. Cognisant of this, the TSOs note that trade-offs exist, for example, they suggest although network build out reduces Network Imperfections Costs it could require a recovery of capital expenditure costs, and although increased renewable decrease market prices it increases Network Imperfections Costs.

RAs response

The RAs agree with respondents that constraints need to be closely managed by the TSOs to ensure the Network Imperfections Price borne by consumers remains reasonable.

As part of the Price Review 5 Electricity Networks process[10], EirGrid and the CRU have put in place mechanisms to improve and incentivise reporting of Network Imperfections and network constraints. The CRU notes that Network Imperfections Costs have risen throughout the PR5 period and that EirGrid's performance in relation to the Network Imperfections and Constraints incentive has been consistently poor. In PR6, the CRU is planning to retain a version of the Network Imperfections & Constraints incentive with modifications based on learnings from PR5. The incentive will be more mechanistic and output-based, focusing on metrics that measure actual reductions in constraint costs. The CRU is currently consulting on its PR6 proposals (CRU202590) and welcomes further feedback from stakeholders in relation to the Network Imperfections & Constraints incentive; comments should be sent through the CRU's consultation platform or to pricereview6@cru.ie by 17.00 on 11 September 2025.

The Evaluative Performance Framework has been devised as part of the SONI 2020 to 2025 price control. The primary purpose of the evaluative performance framework is to provide financial and reputational incentives to SONI to encourage it to engage in actions and behaviours which contribute to four high-level outcomes. One of these outcomes involves the system-wide costs, to ensure Northern Ireland electricity consumers get good value for money which reflects efficiency within, and across, different parts of the Northern Ireland electricity system, over the short term and the longer term. Dispatch Balancing Costs are within the scope of evaluative performance framework. The Evaluative Performance Framework will be reviewed for the start of the next Price Control period.

[10] Reference CRU Price Review 5 Electricity Networks

SEM Committee Decision

Notwithstanding the work EirGrid are currently carrying out as part of the Price Review 6 Electricity Networks process, the improvement in TSOs reporting, and the implementation of the Mid-Year Review, the SEM Committee has decided that the RAs should continue to engage with the TSOs regarding the progress to achieve key Network Imperfections Charges related incentives. The SEM Committee understands the challenges of the impact that volatility has on consumers and industry alike.

The SEM Committee notes the RAs and TSOs have been engaged in a number of actions to help mitigate/control Network Imperfections Costs. Some of these actions relate to the following:

North South Interconnector (NSIC): The delivery of the second NSIC will reduce system constraints and thus reduce Network Imperfections Costs and will also improve security of supply, while also contributing to decarbonisation objectives.

Action Plan on Dispatch Down: In 2024, SONI undertook an action plan to reduce renewable dispatch down in Northern Ireland, EirGrid are undertaking a similar review in Ireland in 2025. The combination of these reviews and subsequent action plans should reduce Network Imperfections Costs across the SEM.

Network investment: In addition to the NSIC, both RAs have approved extensive network investment to modernise and increase the ability of the system to transmit electricity (and reduce constraints).

Bidding rules: In March 2024, the SEM Committee (SEMC) published a note reminding market participants of the requirement to meet the BCOP bidding rules. The SEM RAs are actively considering enhancements to the bidding rules in the SEM.

All Island Programme: The SEM Committee has an extensive All Island Programme of work (covering Interconnection, Future Arrangements for System Services, and

Scheduling and Dispatch programme) to enhance flexibility within the SEM which will allow more effective delivery of renewable electricity to customers (SEM-24-034).

Quality of Reporting of Constraints and Curtailment: As part of the SEMC Network Imperfections Charge 2022/23 Decision Paper (SEM-22-045), SEMC requested the TSOs to develop an enduring method for monitoring Network Imperfections Costs within the Tariff Year in the form of a biannual review. The RAs continue to engaging with the TSOs 5 to improve the reporting, readability, and forecasting of Network Imperfections Charges. Better and earlier identification of costs and the drivers will allow better targeted actions to be taken sooner.

TSO Operational Roadmap: The SEM RAs are working with the TSOs to deliver on their operation roadmap in an expedited manner. This should help to reduce renewable dispatch down and thus curtailment costs in particular.

Incentives: SONI's Forward Work Plan for 2024/253 states that it will continue to take steps to minimise dispatch balancing costs and will report on the outturn of those when completed. The current price control framework "Price Review 5"4 financially incentivises EirGrid to deliver on actions outlined in its multi-year plan., Aas part of this process the CRU have put in place mechanisms to improve and incentivise reporting of Network Imperfections and network constraints. A similar approach to incentives is expected in the forthcoming Price Review 6 period.

3.4 THE TSOS' MODELLING AND FORECASTING OF NETWORK IMPERFECTIONS COSTS

The consultation requested stakeholders' comments on the TSOs' forecasts of costs and assumptions for Tariff Year 2025/26. The section below focuses on comments received specifically regarding the TSOs' modelling and forecasting approach.

Comments Received

Four respondents provided feedback on the TSOs' modelling and forecasting approach.

One respondent (Flogas) recognised the TSOs' efforts to improve the accuracy of cost forecasting and the intention to refine modelling assumptions and inputs. Another respondent (Power NI) stated their reliance on EirGrid's expertise to ensure the modelled costs and assumptions are as reasonable as possible.

One respondent (Bord Gáis Energy) suggested improvements to the TSOs' modelling approach, specifically the treatment of Interconnected Markets. Bord Gáis Energy suggested the current approach to forecast interconnector flows fails to reflect the dynamics of interconnected markets and they deem this element essential for understanding the impact of the Greenlink and Celtic Interconnectors. Bord Gáis Energy requested increased transparency of the modelling assumptions & data inputs and requested the TSOs publish such data. Furthermore, Bord Gáis requested a longer-term three-year forecast of constraints would enable stakeholders to assess the true impact of large-scale investment, particularly for the Southeast region.

Within the TSOs' response, they suggested there is a misinterpretation of their 'Take One Out at a Time' (TOOT) analysis of the inflationary drivers of Network Imperfections Costs within the Consultation Paper. The TSOs clarified that the objective of the TOOT method is to demonstrate the impact of components of Network Imperfections Costs, and the analysis does not reflect the actual monetary amount each component has on the forecast. The TSOs add that due to the complex nature of interdependent components, it is not possible to determine the absolute cost of an individual component in isolation. The TSOs acknowledged the presentation of the TOOT analysis is unclear and they intend to review the merits of continuing the approach.

RAs' Response

The RAs acknowledge all comments and suggestions made by market participants. The RAs acknowledge amendments to modelling methodology should be considered by the TSOs. Nevertheless, the RAs note the complex task that the TSOs have in modelling Network Imperfections Charges. The RAs will continue to further engage with the TSO regarding improvements that could be made to their modelling approach.

The RAs disagree with the TSOs' suggestion that the Consultation Paper inaccurately describes the outputs from the TOOT analysis. The RAs understand that each element of the TOOT analysis describes either an inflationary or deflationary price driver for the Network Imperfections forecast. In Section 2 of the Consultation Paper, the RAs acknowledge the TOOT analysis of the TSOs forecast Network Imperfections Charges is relative to their Tariff Year 2023/24 back cast findings. Nonetheless, the RAs note the TSOs' acknowledgement that improvements could be made to the comparison process. Furthermore, the RAs are of the view that the TSOs could consider amending the TOOT analysis exercise to be more systematic and comparable. The RAs intend to engage further with the TSOs to develop this process in advance of next year's submission.

NERA Consultants have assisted RAs with their review of the TSOs' submission and model(s). NERA have provided RAs with recommendations for future consideration specifically relating to the TSOs' TOOT analysis and an overview of their findings are outlined as follows;

- NERA recommend that the TSOs expand their use of the TOOT analysis to reflect the differences between the PLEXOS unconstrained and constrained models. This exercise would identify the constraints that contribute most to the Network Imperfections Charges. NERA note that while the current format of analysis identifies the (forecast) drivers of change between the tariff periods, it does not reveal the relative impact of modelled system constraints on the level of Network Imperfections charges in any given year;
- NERA note the TSOs' forecast report does not describe assumptions behind the N-1 contingencies with the same level of detail as operational constraints. The TSOs in

response to queries, elaborated that the system is operated in a fully N-1 compliant manner and that their PLEXOS model models the vast majority of such contingencies. NERA recommend that the TSOs include the N-1 constraint in the expanded TOOT analysis to quantify the contribution of major constraints towards the Network Imperfections Charges.

The RAs intend to consider NERA's recommendations and will engage with the TSOs to consider implementing the changes required in future submissions.

SEM Committee Decision

The SEM Committee has considered comments made by stakeholders. The SEM Committee requests that the RAs review and consider the recommendations and proposals provided by NERA and following the completion of the review, the RAs should engage further with the TSOs to consider the implementation of considered recommendations. The SEM Committee also requests RAs to engage with the TSOs to consider the best practise approach of modelling interconnected markets within their PLEXOS Model. Furthermore, the SEM Committee requests that the TSOs conduct a review of their TOOT analysis approach and present their findings to RAs. The SEM Committee requests the TSOs to consider a more simplistic, reader-friendly, comparative approach in next year's forecast submission.

3.5 INDIVIDUAL PRICE DRIVERS OF NETWORK IMPERFECTIONS CHARGES & THE IMPACT ON THE CONSUMER

The Consultation Paper requested stakeholders' views on the TSOs' forecasts of costs for Tariff Year 2025/26. In particular, stakeholders' views of the costs attributed to Generator Outages was requested. The following section focuses on comments received regarding the increase in costs observed, the impact on the consumer, individual price drivers of the TSOs' forecast, amongst other aspects.

Comments Received

Several respondents commented on the forecast increase in costs observed. One respondent (Electric Ireland) expressed concerns of the proposed 56% increase in costs and believe that RAs need to examine all options to keep the increase to a minimum. Two respondents (Energia and the Electricity Association of Ireland) suggested the variance of Network Imperfections Charges over the past four years and suggested this exposes consumers to high volatility. Both respondents shared a similar view and suggested there may be merit in carrying out multi-annual calculation of Network Imperfections Charges (for example, two or/ to four years in advance). They highlighted that the longer-term forecast approach is similar to the gas tariff setting process and this could spread high costs over a longer term, and consequently not expose consumers to volatility. One respondent (Net Zero Energy) noted the upward trajectory of Network Imperfections Costs and suggested the costs to consumers are "*out of control*" and have increased five-fold from 2016-2025. Another respondent (the TSOs) suggested the proposed 2025/26 Network Imperfections Price (€22.28/MWh) should not be compared to the 2024/25 Network Imperfections Price (€14.62/MWh) "as doing so obscures the fact that the 25/26 must be higher to offset the under recovery in the current year".

One respondent (Flogas) placed a strong emphasis of the impact of Network Imperfections Charges on the consumer. Flogas noted that the proposed increase on consumer's Estimated Annual Bills is not marginal and suggested it reflects a material cost to both households and businesses at a time when energy affordability is under pressure. Flogas suggested that more emphasis should be placed on consumers during the Network Imperfections Charge setting process and that future proposals should be accompanied by consumer impact assessments that outline the scale of potential bill increases. They also suggested a 'tolerance threshold' could be introduced that would trigger an additional review and justification when forecast increases exceed a certain level. Cognisant of the potential consumer impact, Flogas urged RAs to reconsider the proposals and adopt a more balanced, transparent and forward-looking approach.

Two respondents (Flogas and the TSOs) provided feedback on the cost provision for forecast Generator Outages. Flogas suggested the increase appears to be based on updated Commercial Offer Data and a revised PLEXOS Methodology and noted that no comparative analysis has been presented by the TSOs to explain the basis for the sharp escalation. Flogas also referred to SEMC's open letter to Market Participants (SEM-25-003) and noted concerns that certain generators bidding practises would lead to increased Network Imperfections Costs. Flogas suggested the TSOs should justify the change of method from previously using proxy data methodologies and produce a detailed comparison of 2024/25 and 2025/26 Generator Commercial Offer Data and Outage forecasts. Flogas emphasised that transparency is required to justify that the increased costs are based on genuine system outcomes and that they reflect strategic behaviours of certain participants that lead to inefficient outcomes. Flogas also emphasised that consumers should be protected from concerning bidding behaviours and that proxy Commercial Offer Data should be used within the TSOs' PLEXOS model for 2025/26, in line per previous years. The TSOs stated the €75 million is not the isolated inflationary impact on the forecast of costs for generator outages. The TSOs suggested that generator outages, coupled with Transmission Constraint Groups that are required for system security has led to an increase in Network Imperfections Costs, particularly within the current 2024/25 Tariff Year. The TSOs add if the Commercial Offer Data of the required replacement units presents a very large electricity production cost, such costs are transferred to Network Imperfections Costs.

Two respondents (Energia and the Electricity Association of Ireland) commented on the TSOs' cost provision for Renewable Energy Sources (RES) and Interconnector Capacities. The Electricity Association of Ireland suggested the TSOs should present the cost attributed to each driver. Energia suggested the increased imports from Great Britain via the Greenlink Interconnector is likely to have had an impact on costs attributed to the interconnectors. Furthermore, Energia suggested the impact that increased interconnection has on Network Imperfections Costs must be assessed as part of a Cost-Benefit Analysis for any future interconnection on the island of Ireland. Both organisations referred to their individual responses to CRU's consultation on the Initial Project

Assessment of the MaresConnect Interconnector. The Electricity Association of Ireland suggested that the impact of Network Imperfections Costs should be thoroughly considered in the Cost Benefit Analysis of future interconnection, including MaresConnect.

Net Zero Energy referred to the fuel cost element of Network Imperfections Charges and noted fuel costs remain a central variable cost driver. Net Zero Energy suggested the level of competition in utility scale batteries is not fully benefitting consumers, adding that EirGrid will partially benefit from the reserve requirement derived from batteries until it manages to remove other constraints caused by conventional units that are 'constrained on'. Net Zero Energy suggested the lack of zero carbon sources of inertia is costing consumers and emissions as EirGrid needs to turn on fuel sourced generators. Net Zero Energy's suggested solution is to build non-fossil fuelled sources of independently dispatchable inertia. They also urged EirGrid to provide clarity on the intention to source all system services from zero-carbon sources by 2030.

One respondent (the TSOs) commented on Transmission Outages as a key driver of Network Imperfections Costs. The TSOs suggested the Consultation Paper inaccurately represents the new modelling approach for Transmission outages. The TSOs clarified the new approach was developed due to both the concern of the immature nature of outage plans at the time of modelling and the known increased influence that the driver will have on costs as a result of the ramp up in infrastructure projects in the coming years.

RAs' Response

The RAs acknowledge the range of comments made by market participants.

The RAs are acutely aware of the increasing trend and the magnitude of costs associated with Network Imperfections Charges, and the consequent impact this has on the consumer. The RAs note some respondents' suggestion that there may be merit in carrying out multi-annual calculation of Network Imperfections Charges, similar to the gas tariff setting process. The RAs consider this out of scope for the current consultation but

may consider the views expressed in the future as this process could potentially increase price certainty for consumers.

The RAs acknowledge the comments made by a market participant who suggested that more emphasis should be placed on consumers during the Network Imperfections Charge setting process. The RAs consider there is merit in the respondent's suggestion that future proposals should be accompanied by consumer impact assessments that outline the scale of potential bill increases. The RAs are of the view that the TSOs should provide this consumer impact assessment as part of their annual submission, and this would increase the transparency for consumers, and this would increase the transparency for consumers.

In relation to the TSOs' change to the modelling approach to quantify the impact that Transmission Outages, the RAs queried how much the outcome of the new modelling approach varies from the old modelling approach. In response, the TSOs stated that they cannot determine a delta in the approaches in cost terms however they suggest the historical RES availability tends to be a good predictor of actual RES availability, whereas the representative set of outages was a poor predictor of outturn outages. Following additional engagements between RAs and the TSOs, the TSOs noted their intention was to run the constrained and unconstrained model with a fully intact network and model the impact of Transmission outages by providing different renewable availability figures to both models as follows;

- Unconstrained Model: Full Renewable availability based on 2023/24 profiles scaled up to new installed capacities;
- Constrained Model: Renewable availability based on 2023/24 profiles scaled up to new installed capacities but netted off per trading period by the equivalent quantity of 2023/24 energy that was dispatched down for Transmission Limitations.

The TSOs informed RAs that in addition to the above modelling approach, 2023/24 back cast (actual) Transmission outages unintentionally remained present in their 2025/26 PLEXOS Model. The TSOs confirmed no new transmission outage file was presented into the process this year and the process step to prevent the model from pointing to an

outage file was omitted in error. The TSOs re-run their model with this item corrected and it reduced the component of Network Imperfections Cost by approximately €36 million.

During engagements, the TSOs also informed RAs that a correction to the reserve calculation was applied to their model. This issue occurred due to the TSOs' model incorrectly determining the Largest Single Infeed throughout the 2025/26 forecast period. This issue was link to the introduction of the new Greenlink Interconnector and resulted in units being incorrectly dispatched in the constrained model, leading to increased Network Imperfections forecast costs being reported. The TSOs corrected this error and re-run their model, it resulted in a reduction of costs by approximately €6 million. The RAs recommend this correction is applied.

The RAs note the TSOs' combine the effect of Interconnector flows and RES capacity updates in their forecast. The RAs requested how much of the costs can be separately attributed to i) IC flows and ii) RES Updates. The TSOs responded and state they have treated RES/Interconnector profiles to have a significant influence on each other in their 2025/26 Forecast Model and have derived forecasted RES profiles/Interconnector flows as a single linked input. Furthermore, the TSOs add the key message they are trying to convey in their TOOT analysis "*is that a considerable increase in cheap energy into the market via RES and a forecast increase in Interconnector Imports has the impact of driving down Market Price but also is an upward driver for Imperfections Costs".* The TSOs noted updates to RES capacities were provided separately for Northern Ireland and for Ireland however only Ireland's updates were included in the new DBC forecast model. This resulted in 157 MW of extra Northern Ireland Wind capacity that was missing from the TSOs' original forecast submission. The TSOs re-run their model with this item corrected and it increased the Network Imperfections Cost by approximately €15 million. The TSOs note the addition of the extra renewable capacity reduced the cost of the unconstrained (market) and constrained (operational) run. However, as the capacity was added to an already constrained area of the network, the gap between both model costs reduced disproportionately resulting in the increase in Network Imperfections Costs.

Regarding Generator Outages, the RAs note a respondent's suggestion that the TSOs should justify the change in methodology from previously using proxy data and produce a detailed comparison of 2024/25 and 2025/26 Generator Commercial Offer Data and Outage forecasts. In response to a query made by RAs regarding the forecasting of this cost component, the TSOs state "*Only a small sample size of actual data was available during the 2023/24 back cast process and therefore the data used for the 2024/25 Imperfections forecast to represent these units was used in the 2023/24 back cast that was not derived from actual data. As these units only featured in the very latter stages of the 2023/24 back cast period if at all this had a very little influence on the accuracy of the back cast model".* In response to another query made by RAs regarding the absolute value of such outturn costs over the past five tariff years, the TSOs said "*it is not possible to isolate the cost of one individual component. The system is run via a complex optimization of multiple inter-dependent requirements that requires the function of an optimization software package to determine the least cost solution. It is very challenging to back analyse the output of this optimization solution and allocate Imperfections costs for a single reason. A significant amount of Imperfections costs simultaneously satisfies multiple interdependent requirements so to allocate a cost to a single reason is often not possible".*

In response to stakeholder's comments regarding the Initial Project Assessment (IPA) of the MaresConnect Limited interconnector, the CRU undertook a detailed IPA of the of the MaresConnect Limited interconnector application, in line with the CRU 2018 Policy for Electricity Interconnectors: Assessment Criteria for Electricity Interconnection Applications, which contains a high-level set of criteria that the CRU use to assess applications from the developers of electricity interconnection projects, informed by the ENTSO-E Guideline for the cost-benefit analysis of grid development projects. The purpose of the IPA is to determine if the project is in the best interest of the Irish consumer and whether the project should be provided with regulatory underpinning. The conclusion on whether the interconnector is in in the interest of consumers considers the balance between the impact on wholesale electricity prices in SEM (and therefore consumer welfare) on security of supply, and on decarbonisation objectives. The CRU undertook a

4-part assessment; market modelling analysis (where a change in other interconnector welfare was considered), system impact assessment, cost and technical assessment, and deliverability assessment. The proposed decision which was consulted on by the CRU was to award the MaresConnect interconnector with a Cap and Floor regime in principle and is based on conclusions from the analysis, all which were outlined in the paper. The CRU is in the process of reviewing the responses to the consultation and undertaking further analysis where warranted. The CRU will address the responses to the MaresConnect IPA consultation in its Decision Paper which will be published in 2026.

The RAs note the respondents' comments regarding System Services offerings. The Day Ahead System Services Auction (DASSA) is expected to go-live in May 2027. Regarding inertia, the Low Carbon Inertia Services (LCIS) phase I procurement has been successfully completed and is now in its delivery phase. LCIS Phase II is currently out for consultation and will procure additional inertia and reduce the reliance on conventional units to provide inertia services. The SEM Committee's Information Paper on the outcome of LCIS Phase can be found here SEM-24-074.

The RAs' appointed consultants, NERA, performed a detailed review of the TSOs' PLEXOS and supplemental models and engaged with the TSOs to clarify aspects of their modelling approach and assumptions. This process revealed an error in the PLEXOS model that the TSOs. Following a review of the TSOs' constrained model solution file, it was determined that the presence of a Dublin Transmission constraint group (derived from the Back cast Model from the 13th of May until the 1st of October) was left engaged in the 2025/26 Forecast model. It was not the TSOs' intention to leave such transmission constraint group engaged in the forecast model. Following engagements with the TSOs, the TSOs re-run the model with such requirement removed and it has reduced Network Imperfections Costs forecast by ~€8.6 million.

Regarding Pumped Storage Costs, analysis conducted by RAs confirmed that the TSOs are using the sum of the latest historic CPREMIUMS and CDISCOUNT payments in their forecast cost calculations attributed to pumped storage units. The TSOs' forecast costs

associated with pumped storage units for Tariff Year 2025/26 is €23.06 million, this is based on actual Premiums and Discounts paid to pumped storage units between 1st May 2024 and 30th April 2025. The RAs have devised an alternative method to calculate the forecast costs for Tariff Year 2025/26 and such method accounts for the average costs incurred during the twelve months of the previous Tariff Year (i.e., 1st October 2023 – 30th September 2024). The RAs incorporated the full twelve months of data as it incorporates an average of underlying trends across a Tariff Year and should therefore be a better forecast. From 1st October 2024 – 30th September 2024, the average monthly cost of pumped storage units is €1.6 million. The RAs sum the average across the forthcoming 12-month tariff period and calculated the total as €19.5. This alternative method represents a saving of approximately €3.4 million.

SEM Committee Decision

The SEM Committee has considered comments made by all stakeholders.

The SEM Committee requests that the TSOs include a consumer impact assessment that outlines the scale of potential bill increases in their future Network Imperfections Charge forecast submissions. This consumer impact assessment should clearly compare the Estimated Annual Bill impact between Tariff Years on consumers. Given the magnitude of costs associated with Network Imperfections Charges, and cognisant of the current and future impact this has on the consumer, the SEM Committee considers this Consumer Impact Assessment to be an essential element of future TSOs' submissions as it increases the transparency for consumers and is in the public's best interests.

Furthermore, the SEM Committee requests the TSOs to engage with the RAs in order to develop the presentation and analysis of the key cost drivers of Network Imperfections Charges in their forecast submission.

Based on updated analysis and modelling undertaken by RAs and the TSOs, the SEM Committee has decided to incorporate the updated, corrected costs associated with Transmission Outages (-€36 million), Reserve Calculations (-€6 million), Security and Operational Constraints (-€8.6 million), and Northern Ireland RES Capacity (+€15 million).

Furthermore, the SEMC has decided to discount pumped storage costs by €3.4 million (i.e., from €23.06 million to €19.58 million). The SEM Committee notes when the K-Factor adjustment is excluded, the total costs (including costs attributed to Article 13.7 of the Clean Energy Package) in Tariff Year 2025/26 is 4% lower compared to the total costs approved in 2024/25.

3.6 THE TSOS' STANDARD AND FREQUENCY OF REPORTING & THE TRANSPARENCY OF NETWORK IMPERFECTIONS COSTS AND DRIVERS

During the consultation period, the RAs requested stakeholders' comments on the TSOs standard and frequency of reporting Network Imperfections Costs and drivers.

Comments Received

Five respondents (Bord Gáis Energy, EPUK, Net Zero Energy, Power NI and the TSOs (i.e., EirGrid and SONI) provided feedback on the frequency and transparency of Network Imperfections Costs and drivers.

Bord Gáis Energy provided several comments on this matter. They suggested the annual volatility of Network Imperfections Charges is driven by increasing DBCs and is exacerbated by the TSOs' lack of modelling transparency and outstanding actions to mitigate constraints that remain to be addressed. Bord Gáis Energy noted their support of the development of a NESO style platform however they emphasised that the success of a platform is contingent on EirGrid first delivering credible, transparent and accurate forecast modelling of system conditions. Bord Gáis Energy suggested there is a lack of transparency of the TSOs' modelling assumptions including the treatment of Interconnected markets and this impacts one ability to make informed investment decisions. They requested the TSOs publish the data used in their underlying model and provide clarity of how the assumptions are derived. Furthermore, they referred to the PR5 incentive framework and emphasised the need for a detailed identification and mitigation of constraints, adding this was not delivered to the effect of reliably informing investment

decisions. Bord Gáis urged a stringent application of the amended incentive under PR6 by both RAs.

Net Zero Energy suggested the Consultation Paper lacks detail of analysing the costs and key drivers of Network Imperfections Charges. Net Zero Energy suggested the TSO needs to be transparent on their reporting on the emissions impact of the System Operator's Dispatch actions. Net Zero Energy also referred to specific progress of the 2025 Climate Action Plan. They requested action is progressed and incentives are in place to deal with the impacts of Network Imperfections from an emissions and cost perspective. Net Zero Energy also suggested a working group of System Operators, RAs and industry bodies is established, and this group could be responsible for modelling, tracking, and reporting on the progress of Network Imperfections Costs with the desire to bring such costs to near zero levels.

One respondent, Power NI, welcomed the frequency of monthly Network Imperfections reporting however they emphasised that although the reporting contains directional movement, it does not contain quantifiable changes. Power NI referred to the Mid-Year Report and suggested it is subject to 'significant delays', noting this year it was not published until June. The respondent welcomes a stable and regular timetable of the Mid-Year Review Report, alongside, monthly reports.

One respondent (EPUK) referred to text within the Consultation Paper that noted Dispatch Balancing Costs (DBCs) are the largest factor of Network Imperfections Costs. EPUK suggested there is a lack of transparency regarding the specific constraints that drive DBCs. They referred to Moneypoint units 1, 2 and 3 who were classified as 'must run' units during April 2021 – August 2024 and suggested it resulted in one of the units being constrained almost constantly, despite rarely clearing in the market. EPUK suggested the TSOs have not published information on the necessity for supporting this constraint. The respondent also referred to a new temporary constraint that was introduced in May 2024 which results in certain Dublin being classified as must run units when imports on the East-West Interconnector are greater than 300MW. EPUK emphasised that no information or analysis from the TSOs to explain the constraint, "*aside from a comment*

that it was necessary for 'load flow control in Dublin'" was provided. EPUK believe greater scrutiny and transparency of constraints on the system would support decreasing Network Imperfections Costs.

The TSOs are of the view they are compliant with all reporting requirements and welcome the opportunity to engage further with RAs, potentially to set up a programme of work, contingent on RAs providing the required resources. The TSOs note depending on the intended scope of work, it may not be possible to implement in the short term, and it will drive additional investment costs. Within their response, they referenced the ongoing delivery of improvements from their Network Imperfections & Constraints Multi-Year Plan 2023–2027,). Additionally, they refer to the reporting of other jurisdictions and note that like for like reporting is often not possible particularly in jurisdictions that operate under different operational security challenges, market rules/structures, and jurisdiction specific legal considerations. The TSOs emphasised the importance that any determination of future reporting obligations/incentives would need to be vetted by TSOs for technical feasibility.

RAs' Response

The RAs acknowledge all comments and suggestions made by stakeholders. The RAs note the ongoing work and engagement with the TSOs over the previous Tariff Years. Nevertheless, the RAs acknowledge this work is ongoing and that further improvements to increase the transparency and readability of Network Imperfections reporting is required. The RAs will continue to further engage with the TSOs regarding the reporting and transparency of Network Imperfections Costs, as well as specific requests made by market participants to determine the feasibility of increasing the transparency of the TSOs' modelling inputs and methods. The RAs note the comments made by a market participant regarding the progress of a certain element of the 2025 Climate Action Plan and note this is out of scope of the current Consultation process.

The RAs note the comment made regarding the granularity and standard of the analysis conducted within the Consultation Paper and the RAs intend to consider this feedback in

the development of future Network Imperfections Charges Consultation papers. The RAs will consider the development of a working group to be established and are of the view that this form of collaboration between stakeholders may be beneficial with the ultimate objective of lowering Network Imperfections Costs, thereby benefitting the consumer. The RAs note the comments made regarding the delays in the publication of the Mid-Year Review report. The RAs note the delay this year was due to the additional resources, analysis and engagement with the TSOs required as a result of the unprecedented under recovery in costs observed within the current Tariff Year. The RAs envisage that the Mid-Year Review report would be published before the end of Quarter 2 each year.

For the PR6 period, the CRU is planning to update EirGrid's reporting requirements in relation to the Network Imperfections & Constraints incentive to improve the transparency, clarity and comparability of data. As set out in Section 3.3, the CRU is currently consulting on its proposals for PR6 and would welcome feedback from stakeholders.

The RAs' appointed consultants (NERA) had the following recommendations for the TSOs regarding the reporting of Network Imperfections Charges:

I. Recommend the TSOs make the forecast report more transparent by providing a clear mapping between the historical and forecast cost categories; and
II. Recommend that the TSOs perform a TOOT analysis on the differences between the PLEXOS unconstrained and constrained models.

Further information can be found in Section 4.

SEM Committee Decision

The SEM Committee has considered comments made by stakeholders. Given the significance of costs associated with Network Imperfections Charges, and its impact on current and future consumers, the SEM Committee reiterates their position and deems it essential that the TSOs increase the transparency of forecast and actual costs associated with Network Imperfections Charges on a publicly available platform, on a real time basis.

Additionally, the SEM Committee reiterates the importance of transparent reporting on the TSOs' measures to reduce such costs to ensure that consumers' money is being used in an efficient manner. The SEM Committee has decided that the RAs should continue to engage with the TSOs regarding improvements to Network Imperfections reporting and the transparency of costs and consider the recommendations provided by NERA Economic Consultants. As set out in Section 3.5, the SEM Committee requests the TSOs to include a consumer impact assessment that outlines the scale of potential bill increases in their future Network Imperfections Charge forecast submissions.

3.7 THE TSOS' EXCLUSION OF COSTS ATTRIBUTED TO DEMAND SIDE UNIT (DSU) ENERGY PAYMENTS

The TSOs have excluded costs associated with DSU Energy Payments from their forecast submission due to insufficient information available.

Comments Received

Two of the eleven consultation responses received focused solely on the TSOs' exclusion of forecasted costs associated with DSU energy payments. Both respondents (Federation of Energy Response Aggregators (i.e., FERA) and iPower) expressed deep concerns of the omission of costs associated with DSUs and reiterated the responses they submitted to the 2024/25 Network Imperfections Charges Consultation process (Reference Decision Paper: SEM-24-064). Both respondents expressed concerns regarding the length of time that the TSOs and SEM Committee are taking to examine the matter and delays to the implementation of the DSU Energy Payments decision. FERA and iPower also referred to the legal obligations under European Union policy, including, inter-alia, the Clean Energy Package. FERA emphasised the SEM Committee's legal obligations and requested that the removal of DSU Energy Payments from Network Imperfections Charges is reversed. iPower suggested the removal of DSU payment forecasts from Network Imperfections Charges undermines the transparency and accuracy of Network Imperfections Charges forecasting. iPower requested RAs to acknowledge the

unresolved status of SEM-24-046 in its 25/26 Network Imperfections decision paper, provide a clear and time bound pathway for resolving the treatment of DSU energy payments and consider including a contingency for 2025/26.

RAs' Response

The RAs acknowledge the comments made by market participants regarding the absence of costs associated with DSU energy payments within the TSOs' Network Imperfections Charges 2025/26 forecast. The exclusion of costs within the Network Imperfections Charge is without prejudice to a decision on what payments accrue to DSUs, and the RAs expect to publish a decision paper on DSU energy payments soon.

SEM Committee Decision

The SEM Committee has decided to maintain the TSOs' forecast of costs attributed to DSU energy payments within the Network Imperfections Charges for Tariff Year 2025/26.

4. RECOMMENDATIONS FROM NERA ECONOMIC CONSULTING

NERA was engaged by RAs to provide support in relation to the review of the TSOs' modelling to set the Network Imperfections Charge for Tariff Year 2025/26. NERA reviewed the reports pertaining to the Network Imperfections Charge that are published by the TSOs and the modelling work that underpins their proposal. NERA's summary of recommendations are quoted below[11].

"4.1 Reporting:

i. Make the forecast report more transparent by providing a clear mapping between the historical and forecast cost categories. The forecast cost is comprised of a large base cost calculated by PLEXOS, supplemented by various additional models to account for cost items that PLEXOS cannot capture. This diverges from the structure of historically reported costs, which are broken out by the costs categories defined in the TSC. These include CPremium/CDiscount, CABBPO, CAOOPO, CCURL, and others. A similar breakdown of forecasted costs would allow a much clearer comparison of forecast costs versus historical costs. To facilitate this mapping, in some cases, the reporting of historical Network Imperfections Cost payments will need to be adjusted to align with the forecast supplemental modelling endeavours. For example, historical reports on itemised CDiscount for wind and solar, CPremium/CDiscount for thermal plants, and interconnector counter trade costs would enable comparison of historical Network Imperfections Costs with forecasts for the upcoming tariff year. Consistent reporting of historical and forecast costs across multiple years would also enable back-testing of the accuracy of forecasts (i.e., comparison of historical *forecasts* to outturn Network Imperfections Costs for the same tariff year).

ii. NERA recommend the TSOs expand their use of the TOOT (take out one at a time) analytical approach. Specifically, we recommend that the TSOs perform a TOOT analysis on the differences between the PLEXOS unconstrained and constrained models. This analysis would identify the constraints that contribute most to the Network

[11] Within the quoted text, 'We' refers to NERA.

Imperfections Charges. Currently, the TSOs only conduct a TOOT analysis of the differences between the back cast and forecast models. While this analysis identifies the (forecast) drivers of change between the tariff periods, it does not reveal the relative impact of modelled system constraints on the level of Network Imperfections Charges in any given year. The recommended analysis would provide insights into the key constraints driving the Network Imperfections Costs.

4.2 Modelling:

iii. The TSOs use PLEXOS modelling only for estimating the *thermal* generation cost differences between the constrained and unconstrained scenarios. Whereas actual Network Imperfections Charges extend to a wider pool of generators and involve more complex calculations based on the differences between the imbalance settlement price and constrained generators' bids. To account for these differences, the TSOs' use supplemental models. However, there is some disconnect between the assumptions that underlie the PLEXOS model and the assumptions that underlie the supplemental models. We recommend more closely aligning those that support the supplemental modelling with those used in the PLEXOS model.

iv. The TSOs derive some of their PLEXOS input assumptions by pre-processing and modifying underlying source data. The source data includes Commercial Offer Data (COD), renewable energy profiles, and interconnector flow limits associated with the renewable energy profiles. While TSOs provide an overview of these processes, in the time available for review it was not feasible to request and examine in detail the underlying models that the TSOs use to derive these input assumptions. It would be beneficial for the transparency of the modelling process for the CRU to review these processes and methodologies more carefully, particularly since the TSOs identified both the COD and updated renewable energy profiles (and associated interconnector flows) as important drivers of Network Imperfections cost changes. Specifically, it would improve transparency if the TSOs more precisely describe (i) how they inferred generator CODs used in the PLEXOS model, and (ii) how the expected increased renewable capacity in

2025/26 was factored into the scaling of historical interconnector flows that were used as modelling inputs.

v. NERA recommend reflecting pricing effects from the Carbon Border Adjustment Mechanism (CBAM), which will take effect from the beginning of 2026. We expect the CBAM to raise the price of GB generation and thus reduce volumes imported over the interconnectors, which we expect will affect Network Imperfections Costs. The TSOs' assessment of the impact of interconnector flows on the SEM suggests that increased flows from GB tend to reduce total system costs but increase Imperfection Costs. Conversely, if the TSOs' assessment is correct, we would expect the reduced flows from GB that would follow the introduction of CBAM to reduce the Imperfection Costs. NERA strongly recommend incorporating the CBAM in future modelling exercises. We further suggest that it may be prudent to consider a scenario with the UK and EU ETS prices aligned for the 25/26 tariff year. This may also require modelling the interconnectors in a more dynamic and forward-looking way, rather than using historical profiles as maximum flow constraints. A more forward-looking approach to modelling interconnectors will in any case be necessary for the 27/28 tariff year to account for the Celtic Interconnector.

vi. NERA recommend explicitly modelling batteries in PLEXOS to more precisely reflect their participation in the energy and system services markets. We understand that the TSOs and RAs are working on revising SEM market rules to allow for greater battery participation in the ex-ante energy markets and that this revision is expected to occur before or during the 25/26 tariff year. NERA also understand that the TSOs and RAs are working to replace the DS3 regime with a market-based system services regime from mid-2027. Failing to capture the full flexibility of battery units to alleviate system constraints may result in overstated Network Imperfections costs.

vii. The TSOs performed re-estimation of CPremium/CDiscount costs for thermal generators in a supplemental model to compare against the PLEXOS results and determine if all charges were captured by the model. We note that there may be data issues in the model that suggest that the current modelling may underestimate the Network Imperfections Costs by €18 million. NERA cannot speculate how the TSOs

would interpret this figure, but it may lead them to revise their proposed Network Imperfections Charge.

viii. The TSOs use PLEXOS to estimate a subset of Imperfection Costs of thermal generators. As PLEXOS cannot fully capture SEM settlement rules, the TSOs also use a supplemental modelling to estimate any incremental Network Imperfections Costs of thermal generators that PLEXOS is unable to capture. The TSOs assessment of the incremental Network Imperfections Costs will only be valid if the supplemental model covers *a*ll of the cost items that PLEXOS can capture, as well as the cost items that PLEXOS cannot capture. Based on the description of the supplemental model in the report, and on the review of the parts of the supplemental model made available to us, we are concerned that the supplemental model may not cover some of the cost items that are captured by PLEXOS, (e.g. the CFC costs), and therefore comparison between the two models would result in misleading estimates of the additional costs. We recommend clearly identifying and modelling the distinct components of the Imperfection Costs of thermal generators. We understand that some separation of these components must be possible, as historical reporting separates these charges.

ix. We recommend revising the other supplemental models to more informatively reflect expected future conditions rather than purely relying on actual historical costs. For instance, we believe using historical payments for constrained renewables is likely to underestimate Network imperfections costs given that renewable capacity is expected to increase substantially over the 25/26 tariff year. If the TSOs intend on relying on historical data, we recommend adjusting the sums that reflect likely changes in underlying conditions that affect Network Imperfections Costs, potentially linking these changes to PLEXOS projections of underlying cost drivers for the tariff period. Or, if none are needed, the TSOs should make a convincing and transparent argument why the historical data alone is the best predictor of future costs. Under the current approach, any deviation between the prior year's costs and historical averages (or other appropriate baseline metrics) will be improperly carried over to the forecasted Network Imperfections Charges".

5. SEM COMMITTEE DECISIONS

Following the consultation process, the SEM Committee has made the following decisions in relation to the Network Imperfections Charge:

1. The Tariff Year 2025/26 Network Imperfections Charge will be €790.24 million, compared to the TSOs' original submission of €883.24 million.

2. The €183.43 million K-Factor adjustment will be applied in full and wholly recovered in Tariff Year 2025/26.

3. The TSOs' provision of costs associated the Article 13 of Regulation (EU) 2019/943 forecast for Tariff Year 2025/26, amounting to €37 million will be included, compared to the TSOs' original submission of €91 million.

4. The Network Imperfections Price to be charged to suppliers is €19.93/MWh[12].

5. The Network Imperfections Charge Factor (FCIMPy) will be set to 1 for the period of 1 October 2025 to 30 September 2026, subject to any alterations following the Mid-Year Review process.

6. The RAs will continue to work with the TSOs to review and improve Network Imperfections forecasting, application and reporting (including the Mid-Year Review report and a Consumer Impact Assessment)), with the objective of increasing transparency and lowering consumer costs.

[12] Based on estimated metered demand 39,650 GWh