



**Imperfections Charges
October 2024 – September 2025**

and

**Reforecast Report
October 2022 – September 2023**

Decision Paper

SEM-24-064

10 September 2024

EXECUTIVE SUMMARY

This SEM Committee paper sets out the Decision regarding the 2024/25 Imperfections Charges.

On 1st July 2024, the Regulatory Authorities (RAs) published a SEM Committee Consultation Paper, [SEM-24-048](#) (the “Consultation Paper”), which considered the TSOs’ submission in relation to their:

- ‘Forecast Imperfections Revenue Requirement for Tariff Year 1st October 2024 to 30th September 2025’; and
- ‘Reforecast Report for Tariff Year 1st October 2022 to 30th September 2023.

In their submission, the TSOs estimate total Imperfections costs of €592.02 million for the Tariff Year 2024/25, compared to the forecast of €448.81 million allowed for Tariff Year 2023/24¹, a €143.21 million increase.

A significant driver of this increase is the inclusion of a provision for potential payments to market participants under Article 13 of Regulation (EU) 2019/943. The potential costs associated with the TSOs’ interpretation of a recent High Court judgment is €158 million and it is proposed that this money is collected to help meet any future obligations which may arise. 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 10th November 2023 (the “**First High Court Judgment**”); a further judgment was delivered on 1st July 2024 (the “**Second High Court Judgment**”); and an *ex tempore* ruling delivered on 10th 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 matter comes before the Court of Appeal on 11 October 2024. The CRU, as the Respondent, issued appeals in both cases on 8th August 2024 and intends to issue an application for a further stay pending the determination of the

¹ The TSOs’ submission for Tariff Year 2023/24 was €448.81 million , reference [Decision Paper SEM-23-067](#).

appeals. The TSOs also identified transmission outages and increased renewable and interconnector capacity as having an inflationary impact on their forecast Imperfections Charges for Tariff Year 2024/25.

The TSOs also proposed a K-factor negative adjustment of -€66.41 million (an over-recovery) for inclusion in the Tariff Year 2024/25 Imperfections Charge. This compares to the negative K-factor adjustment of -€91.17 million (an over-recovery) for Tariff Year 2023/24.

Together, this means the TSOs proposed an Imperfections Charge of €592.02 million for Tariff Year 2024/25, giving an Imperfections Price of €15.26 per megawatt-hour (MWh)². In the consultation ([SEM-24-048](#)), which was open from 1st July to 26th July 2024, the SEM Committee sought stakeholders' views on both the totality of the TSOs' proposed Imperfections Charge and sought comments on its constituent parts, in particular, the TSOs';

- forecast demand (38.8 TWh) for Tariff Year 2024/25;
- new PLEXOS modelling approach;
- forecast costs associated with:
 - operational constraints;
 - transmission outages;
 - pumped storage units; and
 - potential costs associated with Article 13 of Regulation (EU) 2019.

The RAs received 6 responses to the Consultation Paper. Three of the six responses focused solely on the potential costs included within the TSOs' Imperfections Charge 24/25 forecast for the provision of potential payments to market participants under Article 13 of Regulation (EU) 2019/943. The remaining three responses predominantly focused on the TSOs' exclusion of costs associated with Demand Side Units (DSU) payments,

² The TSOs forecast demand for the 2024/25 tariff year is 38,800 GWh compared to 38,950 GWh forecast used for the 2023/24 Imperfections calculations.

measures to reduce system constraints (which are the main cause of Imperfections costs), and improvements which could be made to the modelling and reporting of Imperfection costs.

During the consultation period, the RAs conducted further analysis of the TSOs' submission. This resulted in revising downwards the costs for the dispatch of pumped storage units, transmission outages and operational constraints (reference Section 3).

Taken together, such decisions reduced overall Imperfections costs by approximately €25 million to €567.21 million, giving an Imperfections Tariff of €14.62/MWh, as shown in Table 1 below.

	SEMC Decision Tariff Year 2024/25	TSOs Proposed Costs Tariff Year 2024/25	Difference	Difference
Total Constraint Costs	€633.62m	€658.43m	-€24.81m	-4%
K-factor	-€66.41m	-€66.41m	€0m	0%
Total Imperfections costs	€567.21m	€592.02m	-€24.81m	-4%
Imperfections Price (€/MWh)³	14.62	15.26	-0.64	-4%

Table 1. 2024/25 SEMC Decision Imperfections Costs compared to TSO submitted Imperfections Costs

Following a review of the consultation responses, the SEM Committee has decided that:

1. The Tariff Year 2024/25 Imperfections Charge will be €567.21 million, equivalent to an estimated Imperfections Price of €14.62/MWh.

³ Based on estimated metered demand 38,800 GWh, as estimated by the TSOs

2. The RAs will continue to work with the TSOs to review and improve Imperfections forecasting, application and reporting (including the Mid Year Review⁴ report), with the objective of lowering consumer costs.

3. The Imperfections Charge Factor (FCIMPy) will be set to 1 for the period of 1 October 2024 to 30 September 2025, subject to any alterations following the Mid-Year Review process.

⁴ Reference: [2023-24 Mid Year Review Report](#)

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1. INTRODUCTION

This paper sets out the SEM Committee's decision on the Tariff Year 2024/25 Imperfections Charge and Imperfections Price.

Under the Trading and Settlement Code, 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 (DBC), 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 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. The RA's note that both prices and volumes have increased recently.

Section F.12 of the Trading and Settlement Code⁵ requires SEMO to propose values, for approval by the RAs, of the Imperfections Price (PIMPy) and Imperfections Charge Factor (FCIMPy), which are used in the calculation of 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 Imperfections Charges for Tariff Year 2024/25 is the inclusion of a provision for potential payments to participants under Article 13 of Regulation (EU) 2019 / 943. This provision (€158 million) is sought to ensure sufficient funding is allowed to meet any potential future obligations that may arise, without prejudice to the outcome of the appeal of the High Court Judgments. The TSOs noted within their forecast submission that *"no payments would be made until the legal*

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

process is finally concluded and there is a regulatory approved calculation methodology and payment mechanism in place”.

The TSOs submitted reports to the Regulatory Authorities (RAs)⁶ with their forecasts of the costs to be covered by Imperfections Charges during the period 1 October 2024 to 30 September 2025. Following discussions between the RAs and TSOs, the Consultation Paper was published on 1st July 2024.

The RAs received six consultation responses. Table 2 below lists the respondents. Having considered all responses, the SEM Committee through the publication of this Decision Paper sets out the Imperfections Price for Tariff Year 2024/25.

Respondent
Bord Gáis Energy
Energia
FERA
GR Wind Farms Limited
iPower
Wind Energy Ireland

Table 2: List of respondents

2 OVERVIEW OF TSOS' TARIFF YEAR 2024/25 IMPERFECTIONS CHARGE SUBMISSION

The TSOs had forecast an Imperfection costs of €658.43 million for Tariff Year 2024/25 which, with the addition of the negative K-factor of -€66.41 million, would give a total of €592.02 million, equivalent to an Imperfections Price of €15.26/MWh⁷ (see Table 1). This represents a 32% increase from the €448.81 million allowed Imperfections cost for Tariff Year 2023/24.

⁶ Reference [SEM-24-048](#); Annex 1 and Annex 2

⁷ Based on a TSO estimated total demand of 38,950 GWh in the SEM for 2023/24, as forecast by SEMO.

2.1 DISPATCH BALANCING COSTS (DBC_s)

DBC_s include Constraint Costs, Uninstructed Imbalance Payments and Generator Testing Charges. Such costs contributed to the majority of the TSOs' forecast costs for Tariff Year 2024/25⁸.

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 generator⁹.

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 €448.71 million compared to €407.24 million for Tariff Year 2023/24. Transmission outages were attributed to have had the greatest inflationary impact on the PLEXOS modelled Imperfections costs (see Figure 1).

⁸ In order to increase transparency around DBC_s, 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.

⁹ Reference: [Incentivisation of All-island Dispatch Balancing Costs \(SEM-12-033\)](#)

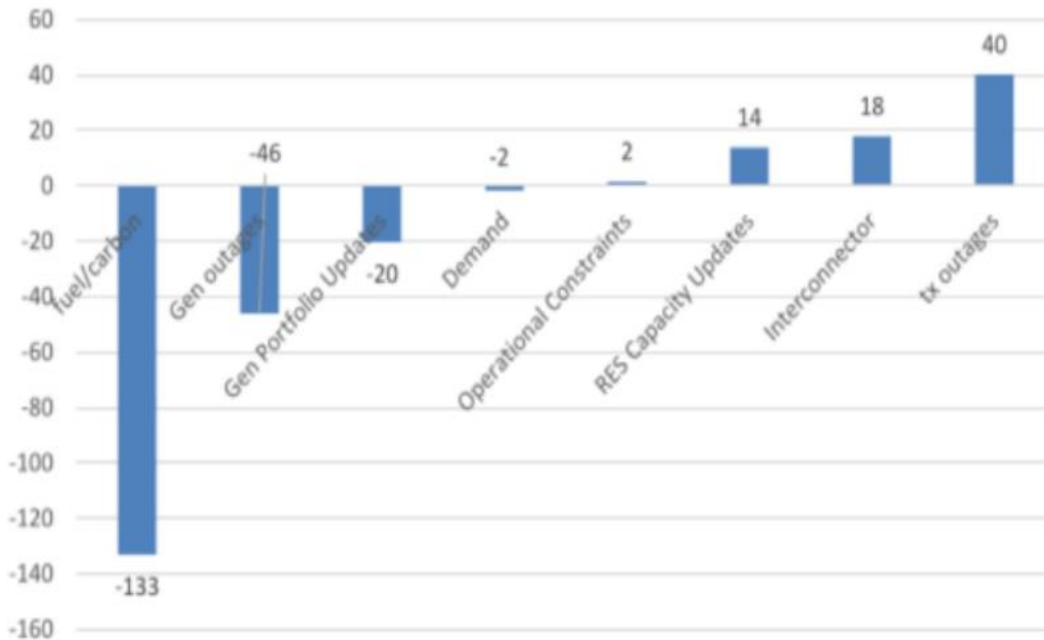


Figure 1. The key drivers of change in the TSOs' Tariff Year 2024/25 PLEXOS Imperfections Costs relative to the TSOs' backcast findings from Tariff Year 2022/23¹⁰

'Supplementary Modelled Constraints' are costs not captured in the TSOs' PLEXOS modelled costs. For Tariff Year 2024/25, the TSOs forecast the supplemental modelled costs to be €51.72 million, significantly lower than the previous tariff year's forecast of €205.99 million.

For Tariff Year 2024/25, 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.

¹⁰ Reference [SEM-24-048](#); Backcast Report 2022/23

The TSOs' forecast of Uninstructed Imbalances for Tariff Year 2024/25 is zero, as the TSOs have assumed that the additional redispatch costs will be recovered through a separate Uninstructed Imbalance Charges.

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' forecast of Testing Charges for Tariff Year 2024/25 is zero, as they have assumed recovery of such costs will be through separate Testing Charges.

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 Modelled Constraints.

2.3 OTHER SYSTEM CHARGES

Other System Charges (OSC) include Generator Performance Incentive Charges, Short Notice Declaration Charges and Trip Charges, which are Transmission Use of System Charges levied on Generators in respect of events or the provision of services that affect DBCs and Ancillary Service Costs.

The TSOs have assumed Generators are compliant with the Grid Code requirements resulting in no charges for recovery and a forecast of zero for OSC for Tariff Year 2023/24.

2.4 ARTICLE 13.7 COSTS

The Clean Energy Package has implications for the compensation of generator re-dispatch. The TSOs seek a provision of €158 million for potential payments to participants under Article 13 of Regulation (EU) 2019/943. 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.

As indicated, the CRU has appealed the High Court Judgments. Arising from the High Court Judgments there is a potential liability which the TSOs have estimated. Against this background, the SEM Committee considers it appropriate to include the current best estimate of the potential liability in tariffs based on the TSOs estimate. The collection of these costs in the upcoming tariff serves to mitigate the risk of a potentially significant, higher increase in charges on customer bills in a subsequent year.

The TSOs noted no payments would be made until the legal process is concluded and there is a regulatory approved calculation methodology and payment mechanism in place. As stated in the Executive Summary, the CRU is appealing the High Court Judgments and, at present, a stay is in place on the final Orders that have been made by the High Court in the cases.

2.5 DEMAND SIDE UNITS (DSUs)

The provision of costs associated with DSU payments was removed from the TSOs' forecast of Imperfections Charges for Tariff Year 2024/25. The TSOs attribute this to *“ongoing consultation in the area, and the costs associated with this change remain uncertain”*.

This is in contrast to the TSOs' forecast of Imperfections costs for Tariff Year 2023/24, where a provision of €56 million for DSU Energy Payments was included in the TSOs submission. This provision was based on the expected impact of the implementation of

Mod_02_23 to the Trading and Settlement Code¹¹, as drafted. This Modification¹² was subject to an impact assessment. This impact assessment showed that a significant majority of the impact on the TSOs' forecast of Imperfections Charges was due to broadly 'always on', or 'long-run', DSUs. Based on this impact assessment, the SEM Committee decided to amend the TSOs' submission such that the effect of energy payments to long-run DSUs was removed. This consequently reduced the DSU energy payment cost component of the Supplementary Modelling from €56m to €4.29m ([SEM-23-067](#)) for 2023/24. No provision for DSU energy payments are being sought by the TSO for 2024/25.

2.6 K-FACTOR

The K-factor has two parts: the actual under or over-recovery for the previous Tariff Year (2022/23), and a within-year estimated under or over-recovery for the current Tariff Year (2023/24).

Differences between Imperfections costs and 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 Imperfections Price in the following Tariff Year.

Wholesale fuel and carbon prices are the main component of Constraints Costs that result in Imperfections charges. As estimated fuel costs for the upcoming Tariff Year starting in October are taken from forecasts made in May, they are inevitably higher or lower than the actual outturn, leading to either an under or over-recovery of Imperfections costs. Table 3 shows the TSOs submitted actual K-factor for Tariff Year 2022/23 and their within-year forecast for 2023/24.

¹¹ See [SEMO Mod 02 23 DSU Energy Payments 22 February 2023](#)

¹² SEM-22-090

Item	€ million
Actual under-recovery in 2022/23	(21.59)
Estimated over-recovery 2023/24	88
Total K-factor to be applied in 2024/25	66.41

Table 3. TSOs' K-factor calculation for 2024/25

For the 2022/23 outturn K-factor, in their Decision Paper for Tariff Year 2023/24, the SEM Committee approved the TSOs' forecast under-recovery for 2022/23 of €140.36 million¹³. This was the TSOs' then within-year K-factor estimation. The outturn K-Factor arising from Tariff Year 2022/23 was an over-recovery of €98.4 million. However, in calculating the 2023/24 tariff, an estimated under recovery of €120 million was included. Taking this figure into account results in an outturn under-recovery of €21.59 million for Tariff Year 2022/23.

For the within-year K-factor estimate, in the current Tariff Year, i.e. Tariff Year 2023/24, the TSOs state that, as of May 2024, Imperfections costs are estimated to total €88 million more than originally forecast in their 2023/24 Imperfections submission. This is based on seven month's outturn data (from October 2023 to April 2024) and a revised forecast for the remaining five months of the Tariff Year. It results in an estimated over-recovery and the TSOs state this increase is mostly attributable to operational constraints imposed on units within the Dublin region.

3 REVIEW OF THE TSOs' 2024/25 IMPERFECTIONS CHARGE SUBMISSION

In the Consultation Paper, the RAs requested stakeholders' views on both the totality of the proposed Imperfections Charge and for any comments on its constituent parts, in particular, the TSOs';

¹³ Reference [Decision Paper SEM-22-045](#)

- forecast demand (38.8 TWh) for Tariff Year 2024/25;
- new PLEXOS modelling approach;
- forecast costs associated with:
 - operational constraints;
 - transmission outages;
 - pumped storage units; and
 - Potential costs associated with Article 13 of Regulation (EU) 2019/943

The following sections are summarised as follows:

- **Section 3.1:** details the feedback received regarding the TSOs' modelling approach and forecast demand;
- **Section 3.2:** focuses on comments received regarding the totality and volatility of Imperfections Costs and actions the TSOs could take to minimise such costs.
- **Section 3.3:** outlines the feedback received regarding the removal of costs attributed to Demand Side Units (DSU) energy payments;
- **Section 3.4:** focuses on the TSOs' potential costs associated with Article 13 of Regulation (EU) 2019/943; and
- **Section 3.5:** outlines comments received regarding the costs associated with pumped storage units.

The RAs engaged with the TSOs regarding various queries made by market participants, the TSOs' responses to such queries are also outlined within Section 3.

3.1 FEEDBACK ON THE TSOs' FORECASTS FOR TARIFF YEAR 2024/25

As with previous years' submissions, the primary Imperfections costs are DBCs, in particular Constraint Costs. The Consultation Paper requested stakeholders' views on specific aspects of the TSOs' Imperfections Charges submission. The following section focuses on comments received regarding the TSOs' modelling approach (including interconnectors) and forecast demand, amongst other aspects.

Comments Received

One respondent (Bord Gáis Energy) commented on the modelling assumptions and the demand forecast used by the TSOs in the calculation of Imperfections Charges. Bord Gáis Energy expressed concern that the volatility of Imperfections Charges has “been worsened by TSOs' inaccurate modelling assumptions” and suggest it highlights the need for the TSOs to “*reassess its modelling processes for forecast tariffs and charges*”. Bord Gáis Energy also expressed concerns regarding inconsistent PLEXOS Modelling Methodologies across TSO projects specifically regarding the modelling of interconnectors, which they noted has effects on TLAfs and GTUoS. Bord Gáis Energy suggested it is unreasonable for the TSOs to include Greenlink flows within their forecast modelling as no historic flows are available. Furthermore, Bord Gáis Energy suggest the TSOs implement a more dynamic approach to modelling the SEM with other markets via interconnectors. Another respondent (FERA) requested additional clarity regarding the decreasing impact that interconnectors are having on generation costs versus the increasing costs associated with constraints on the interconnectors. FERA also queried why there are no costs associated with the second North-South Interconnector included in the Imperfections Charges forecast for Tariff Year 2024/25.

Regarding the TSOs' backcast model inputs, Bord Gáis Energy requested the TSO to acknowledge “*that the system is not solely re-dispatched based on operational constraints*” and requested the TSOs provide more detailed analysis to show why operation constraint costs have increased, despite the reduction of the Minimum Set

Requirement (MSR) from 8 units to 7 units. Bord Gáis Energy also requested an update of improvements from engagement between TSO and RAs in Tariff Year 2023/24 relating to the Imperfections Charges reporting process, particularly with regard to transparency and modelling (especially interconnector) methodologies.

Bord Gáis Energy requested clarification of the factors contributing to the TSOs' forecast decrease in demand for the forthcoming Tariff Year. Furthermore, Bord Gáis Energy requested clarity if stakeholders can expect consumers to benefit from the refurbishment of the 220kV and 400kV network.

Another respondent (FERA) noted the inflationary impact that renewables have had on the 2024/25 Imperfections Charges forecast. FERA also referenced the jurisdictional basis of costs associated with refurbishing the grid and other systems charges.

RAs' Response

The RAs acknowledge all comments and suggestions made by market participants. The RAs note the ongoing work with the TSOs over the previous Tariff Year, including via engagements during the Mid-Year review reporting process, has improved the provision of relevant information. Nevertheless, the RAs acknowledge this work is ongoing and that improvements to the report content and readability is required. Furthermore, amendments to modelling methodology should be considered. The TSOs have acknowledged and considered comments made by RAs regarding the presentation of reports in a more systematic, comparable manner and the RAs will continue to further engage with the TSO regarding this.

With regard to the consistency of interconnector modelling methodologies across the TSOs' projects and in response to queries submitted by the RAs, the TSOs state that for the purpose of modelling Imperfections Charges, *"the forecast interconnector flows for 2024/25 are based on fixed flows derived from a 2022/23 historic profile, with Greenlink factored into the flows"*, adding that *"the assumptions around interconnectors and other tariff studies this year (TLAFs and GTUoS) have been based on what is assumed in the 24/25 Imperfections Model, so are therefore consistent"*. The TSOs note other modelling

studies have different study timeframes, emphasis and aims and this leads to variances in certain input assumptions.

The RAs disagree with a market participant's suggestion to omit Greenlink flows from the TSOs' Imperfections Modelling process. The market coupling date for the Greenlink Interconnector is currently scheduled in Quarter 1 of 2025, therefore, it is appropriate for the TSOs to implement a representation of such interconnector into the modelling assumptions for Imperfections Charges for Tariff Year 2024/25, in order to be more reflective of existing and future market conditions. The TSOs have confirmed with the RAs that they will continue to review their interconnector modelling approach in future iterations of the Imperfections forecast.

In response to a market participant's specific query regarding the second North South Interconnector, the TSOs confirmed with the RAs that it was not included in the model as it is assumed to not be connected within the 2024/25 Tariff Year. With regard to the impact of increased interconnection capacity on Imperfections Costs, the TSOs have stated with the RAs that increased interconnection will not always result in increased imperfections costs, rather, the inflationary results in the forecast for Tariff Year 2024/25 are based on a particular set of assumptions and market/system conditions and as conditions evolve it may result in different outcomes.

With regard to the specific queries regarding the TSOs' forecast reduction in demand for Tariff Year 2024/25, the TSOs have confirmed that the demand forecast used for setting the 2024/25 Imperfections Tariff is the demand at the SEM trading point and the demand forecast used in the PLEXOS Model includes system losses (derived using the initial preliminary actual 2023 demand data as a base with the median demand growth percentages (from the 2023 Generation Capacity Statement) applied from 2024 onwards). The TSOs note that *"while the forecast is lower relative to last year's forecast, the actuals continue to grow year on year"*.

The RAs note that transmission outages have had the greatest inflationary impact on the TSOs' PLEXOS modelled Imperfections Costs for Tariff Year 2024/25. In their forecast submission for Tariff Year 2024/25, the TSOs estimate such outages to increase Imperfections Costs by €40 million, a notable increase on the previous Tariff Year (+€27 million). The TSOs state that a significant program of outages planned for the transmission system will lead to the increase in DBC. The RAs note in the previous Tariff Year forecast (2023/24), the TSOs did not include any scheduled transmission outages within their PLEXOS Model. The RAs requested information from the TSOs regarding the specific methodology and data inputs used to estimate the forecast transmission outage costs. Clarification regarding the allocation of the proportion of the €40 million in costs attributed to the refurbishment of the 220kV and 400kV network was also requested. The RAs viewed the TSOs' response as unsatisfactory. The RAs view the respective costs associated with the 220kV and 400kV network upgrade as unclear.

In relation to market participants comments regarding the impact of grid upgrades on the consumer, the TSOs, in response to queries made by RAs, state that any new circuits or circuit upgrade does not increase the technical capability of the circuit but may reduce imperfections by reducing the forced outage rate of the circuit. In response to the RAs query the jurisdictional allocation of costs associated with refurbishing the grid, the TSOs state that *"if the system is subject to significant outages, the SEM is subject to a more constraint generation output leading to increased constraints on the unit that is next in the merit order and technically able to export power located in either NI or IE"*.

The RAs note the TSOs forecast updates to operational constraints will increase Imperfections Costs by €2 million during Tariff Year 2024/25. The TSOs state a key contributory factor to the increase in costs is driven by the increase *"in SNSP levels which led to a minor rise in DBC expenses"*. On the other hand, the TSOs note the all-island minimum set requirement (MSR) of 7 units within the 2024/25 model *"resulted in a minor cost decrease"*. The RAs requested additional information from the TSOs of the specific costs associated with each of the 7 units. Additional analysis to show why operational constraint costs have increased, despite the reduction of the MSR from 8 to 7 units was

also requested. The TSOs failed to provide specific data outcomes for the RAs query and said they did not do an *“analysis of the operational constraints separately and therefore do not have any study results recorded that we can provide of the impact of individual operational constraints in isolation”*. In response to the specific query made by a market participant, *“does the TSO acknowledge that the system is not solely redispatched based on operational constraints”*, the TSOs state *“Yes, the system is dispatched based on the output of an optimisation process including multiple variable inputs/constraints. Operational constraints are a single input to this complex optimisation process”*.

The TSOs estimate that increased renewables have an inflationary impact on forecast Imperfections Costs. One market participant queried if such costs are envisaged to increase in the next 5 years. The TSOs in response to the query envisage a significant increase in renewable connections in the coming years will lead to a greater quantity of dispatch down. The TSOs note such analysis is out of scope the annual TSO Imperfection submission.

SEM Committee Decision

The SEM Committee has considered comments made by stakeholders. The SEM Committee requests that the TSOs engage with the RAs in order to develop the reporting of Imperfections Charges and to continue to critique and review their modelling approach (including interconnector modelling) for Imperfections Charges. The SEM Committee notes the lack of detail in the TSOs responses to RAs queries. Given the anticipated increase in intermittent renewables in the near future, the RAs may consider requesting that the TSO conducts additional analysis to ascertain an estimate of the potential cost impact that increased renewable capacity may have on Imperfections Costs over the next 5 year horizon.

The SEM Committee notes the forecast increase in transmission outage and operational constraint costs incurred since the previous tariff year. Based on engagements between the TSOs and the RAs, the allocation of such costs is ambiguous. Therefore, the SEM Committee has decided to discount the total costs attributed to transmission outages by

50% (i.e., from €40 million to €20 million). The SEMC notes that €20 million still represents a 53% increase compared to tariff year 2023/24. Furthermore, the SEMC has decided to disallow all operational constraints costs (i.e., from €2 million to €0.00). This represents a decrease of €22 million in allowable costs.

3.2 VOLATILITY AND VIEWS ON ACTIONS THE TSOs COULD TAKE TO MINIMISE IMPERFECTIONS COSTS

During the consultation period, the RAs requested stakeholders' comments on the totality of the proposed Imperfections Charge for Tariff Year 2024/25 Imperfections costs forecasts.

Two respondents commented on the level of Imperfections Charges. FERA noted the increasing trend in the Imperfections Charges price and suggested constraint costs have increased by 270% since 2017. FERA queried the drivers of the increasing trend. Bord Gáis Energy suggested it is crucial for the TSO to take immediate measures to alleviate constraints and mitigate the volatility of Imperfection Charges. Bord Gáis Energy also requested increased transparency and suggested the 2024/25 Imperfections Charges submission lacks details on;

- The TSO's progress and efforts made of their constraint abatement plant and its impact on future Imperfection Charges;
- How Imperfections Charges revenues are utilised;
- Engagement between RAs and EirGrid on the removal of constraints and where it would provide value to the consumer.

Bord Gáis Energy also provided suggestions by which the TSOs could take to lower Imperfections costs, with a focus on minimising system constraints and volatility. The respondents' suggestions included proposals for the TSO to develop the following actions:

- Develop a strategic plan to resolve existing issues including constraints;

- Provide more information of the drivers of the forecast K-Factor;
- Take immediate action to mitigate constraints, aligning with PR5 requirements.
- Prioritising improving the accuracy and reducing the costs of the Imperfections Charges Model; and
- Mitigate volatility by introducing a 3-year recovery of the K-Factor adjustment and a 3-year forecast of Imperfections Charges

RAs' Response

The RAs agree with respondents that constraints need to be closely managed by the TSOs to ensure the Imperfections Price borne by consumers remains reasonable. While the general trend in Imperfections costs is one of increase, the increases observed in recently years is mainly due to historically high and consistently elevated fuel prices which was driven by external geopolitical events. A key driver of the increase observed in the TSOs' proposed Imperfections Charges for Tariff Year 2024/25 is the inclusion of a provision for potential payments to participants under Article 13 of Regulation (EU) 2019 / 943 (€158 million). Furthermore, in response to an RA query, the TSOs stated that *“other factors impacting imperfections costs include generator availability, renewable levels, transmission outages, participant trading behaviour, operational constraints and market design”*.

In response to queries from RAs regarding the measures the TSOs are implementing to alleviate constraints and mitigate the volatility of Imperfections Charges now and into the future, the TSOs noted various ongoing programs to alleviate constraints include; *“The EirGrid Shaping our Electricity Future Roadmap ([available here](#))”* and *“the EirGrid Operational Policy Roadmap ([available here](#))”*. The TSOs noted *“the above initiatives are significant steps taken by the Transmission System Operators (TSOs) to mitigate constraints within their control”*, adding *“it’s important to acknowledge that a considerable portion of the variability of imperfections lies beyond TSOs’ control and is influenced by external factors”*.

Following a review and consultation process in 2020/2021 of its TSO licence by the UR, SONI no longer has specific incentives to reduce level of DBCs, with these now being within the scope of SONI's Evaluative Performance Framework. SONI's Forward Work Plan for 2023/24¹⁴ states that it will continue to take steps to minimise dispatch balancing costs and will report on the outturn of those when completed. SONI is developing a performance measure and continues to publish Quarterly Imperfections Cost Reports which provides evidence of the imperfections reductions actions and the future improvements that SONI will make to remove or reduce the cost of each constraint in the next period.

As part of the Price Review 5 Electricity Networks process¹⁵, EirGrid and the CRU have put in place mechanisms to improve and incentivise reporting of Imperfections and network constraints. In their Tariff Year 2022/23 Imperfections Decision Paper, the SEM Committee noted that demonstrable progress in 2021 by EirGrid was weaker than expected: the CRU had raised concerns around EirGrid's failure to provide requested items including a report on all constraints and a quantitative methodology for estimating imperfection cost forecasts and subsequent cost reductions, which is intended to be used to quantify impacts on proposed actions. EirGrid was also lacking a detailed plan to resolve Transmission Constraint Groups. The CRU has since assessed EirGrid's performance against the Imperfections and Constraints Incentive for 2022, and while there was some improvement on 2021 performance, the CRU continues to have significant concerns about the failure to provide requested reporting. While a methodology for the estimation of annual costs was submitted, this was lacking sufficient detail regarding its application¹⁶.

¹⁴ Reference [SONI Forward Work Plan 2023-24](#)

¹⁵ Reference [CRU Price Review 5 Electricity Networks](#)

¹⁶ Reference CRU letter to EirGrid [Re: TSO Incentive Outturn Performance 2022](#)

In relation to TSOs reporting of constraint costs and their reasons, the RAs note that under Article 13.4 of Regulation 943 of 2019 on the internal market for electricity¹⁷, the system operators are required to submit an annual report to their relevant RA on a range of topics related to redispatch volumes, reasons for redispatch, and measures being taken to reduce the need for such actions. The report will highlight:

- i) the level of development and effectiveness of market-based redispatching mechanisms for power generating, energy storage and demand response facilities;
- ii) the reasons, volumes in MWh and type of generation source subject to redispatching; and
- iii) the measures taken to reduce the need for the downward redispatching of generating installations using renewable energy sources or high-efficiency cogeneration in the future including investments in digitalisation of the grid infrastructure and in services that increase flexibility.

The reporting requirements consequently increase the transparency for all market participants and consumers. The RAs have received a draft of the report required under Article 13.4 from the TSOs for the current year and will be consulting with industry on this shortly, prior to finalising the format and content of the report based on the feedback received

The suggestion of spreading the cost of the K-factor over several Tariff Years to smooth costs to consumers and lessen volatility was explored as part of the Tariff Year 2022/23 consultation process. It was decided not to do so due to the potential affect in raising future year's Imperfections Prices because at the time, the K-Factor estimated a shortfall of funding, i.e., an under-recovery of funds¹⁸. For Tariff Year 2024/25, the TSOs estimate a K-factor over-recovery of €66.41 million, therefore spreading the K-factor over several tariff periods, would increase imperfection costs for 2024/25. Furthermore, in response to the RAs query of what actions the TSO can take to mitigate the volatility of both the K-

¹⁷ Reference [Regulation \(EU\) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity](#)

¹⁸ Reference SEM Committee [Imperfections Consultation Paper 2022/23](#)

Factor and the Imperfections Price, the TSOs suggested that the Imperfections spend is “*becoming increasingly volatile and hence harder to forecast*”. The TSOs add they are “*continuously refining*” their “*modelling approach using best practice*”, however, the Imperfections forecast “*contain a lot of parameters that are outside the TSO’s control which lead to volatility of the Imperfections Price and K-Factor*”. Additionally, the TSOs note they will be able to provide more accurate feedback of the drivers of the K-Factor using the backcast analysis for the 2023/24 year. Cognisant of the above, the RAs will continue to consider alternative mechanisms and approaches that lessen the impact on the consumer.

SEM Committee Decision

Notwithstanding the work EirGrid are currently carrying out as part of the Price Review 5 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 improvements to Imperfections reporting in the main forecast report, the K-factor and Backcast reports, and ancillary data spreadsheets. The SEM Committee welcomes the increased transparency for all market participants and consumers as a result of the TSOs’ reporting requirements under Article 13.4 of Regulation 943 of 2019.

The SEM Committee understands the challenges of the impact that volatility has on consumers and industry alike. The SEM Committee are of the view that any over-recovery of monies should be returned to the consumer (via the reduction in total Imperfections Costs) in the upcoming tariff period. Therefore, the SEM Committee has decided not to partially defer the K-factor.

3.3 FEEDBACK ON THE TSOs’ REMOVAL OF COSTS ATTRIBUTED TO DEMAND SIDE UNIT (DSU) ENERGY PAYMENTS

During the consultation period, the RAs requested stakeholders’ comments on the constituent parts of the TSOs’ Tariff Year 2024/25 Imperfections costs forecasts.

Comments Received

Two of the six consultation responses received commented on the TSOs' exclusion of forecasts costs associated with DSU energy payments. Both respondents (FERA and iPower) expressed concerns regarding the TSOs' decision to remove costs associated with DSU energy payments from the Imperfections forecast and referenced the SEM Committee's decision regarding DSU energy payments ([SEM-22-090](#)) and the Modification to the Trading and Settlement Code, MOD_02_23¹⁹. iPower requested MOD_02_03 is formally approved and implemented as soon as possible, adding that such modification is in line with the requirements of the Clean Energy Package and associated obligations regarding DSUs. FERA expressed several concerns regarding the delay in implementing the decision is. Both respondents suggest there has been a delay in progressing the formal approval of MOD_02_03 and requested the removal of DSU energy payments from the Imperfections Charges forecast for Tariff Year 2024/25 is reversed.

RAs' Response

The RAs acknowledge the comments made by market participants regarding the absence of costs associated with DSU energy payments within the TSOs' Imperfections Charges 2024/25 forecast. The SEM Committee is consulting again on the issue of DSU energy payments, and this consultation is available here: [SEM-24-046](#).

SEM Committee Decision

The SEM Committee has decided to maintain the TSOs' forecast of costs attributed to DSU energy payments within the Imperfections Charges for Tariff Year 2024/25. The issue of DSU energy payments is being consulted on again, and the outcome of this

¹⁹ Reference [SEMO Mod_02_23 DSU Energy Payments 22 February 2023](#)

consultation will determine the cost of DSU energy payments to the Imperfections Charge.

3.4 FEEDBACK ON THE TSOs' POTENTIAL COSTS ASSOCIATED WITH ARTICLE 13 OF REGULATION (EU) 2019/943

A significant driver in the proposed forecast Imperfections Charges for Tariff Year 2024/25 is the inclusion of a provision for potential payments to market participants under Article 13 of Regulation (EU) 2019/943. The potential costs associated with the TSOs' interpretation of the recent High Court Judgments is €158 million and it is proposed that this money is collected to help meet any future obligations which may arise. The Consultation Paper requested stakeholders' comments on the TSOs' potential costs associated with Article 13 of Regulation (EU) 2019/943.

Comments Received

Of the six consultation responses received, five provided feedback on the TSOs' potential costs associated with Article 13 of Regulation (EU) 2019/943.

iPower and FERA agreed that the inclusion of the €158 million cost provision is the correct approach. FERA questioned why no payments would be made until a regulatory approved methodology is in place and suggested there "*should be no further delay in developing a methodology*" if the High Court rules that the payments should be made. FERA also suggested that analysis should be provided on the impact of the costs on a jurisdictional basis.

Three of the five (Energia, GR Wind Farms Limited and Wind Energy Ireland) respondents raised concerns that the amount proposed underestimates the level of funding required and suggested that sufficient funding will not be in place for the TSOs to meet future obligations under Article 13(7). Energia and Wind Energy Ireland both referred to the findings of the Second High Court Judgment. All three respondents suggest the TSOs' interpretation of the First High Court Judgment is incorrect as it does not include a provision for foregone financial supports, including State supports. Wind

Energy Ireland requested RAs to clarify the modelling and cost components included in the TSOs' €158 million estimate and also requested RAs to clarify if State supports are included in the €158 million cost provision. In addition, Energia noted the Consultation Paper was published on the same date as the Second High Court Judgment.

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, had previously indicated to the High Court that it intended to appeal the High Court Judgments and appeals were issued on 8th August 2024. A stay was placed on the orders made by the High Court until the first directions hearing before the Court of Appeal (currently scheduled for 11 October 2024) and the CRU intends to apply for a further stay, pending the determination of the appeals. In response to a request for RAs to clarify the modelling and cost components included in the TSOs' €158 million estimate, the RAs confirm the modelling and calculation of the provision was carried out by the TSOs. For clarity, the components of the TSOs' cost provision include only revenues related to the market impacted by redispatch. Separate requests were submitted by EirGrid and SONI in their respective TSO tariff submissions. The submissions regarding foregone financial support (meaning the foregone government support associated with the jurisdictional renewable support schemes) are noted and have been dealt with at a jurisdictional level through the Transmission Use of Systems Charges (TUoS) tariff decisions.

In response to a market participant's query as to why no payments would be made until a regulatory approved methodology is in place, the SEM Committee, and the RAs, are endeavoring to put in place mechanisms to implement the High Court Judgments in the event that an appeal is unsuccessful. However, the RAs note there is a stay on the Orders made in the cases at least until a further hearing is held by the Court of Appeal. The CRU intends to apply for a further stay on the Orders made by the High Court, pending the

determination of the appeals and until the matters have been finally resolved through the Superior Courts. Compensation can only occur when revenues have been collected and a payment mechanism has been developed.

In response to a market participant's request to clarify '*whether the CRU accepts that there is no lawful basis for any further deferral of compensation for curtailment and that this will be paid pending the outcome of the appeal by the CRU*', the RAs note again that the High Court Judgments are under appeal, and a stay on the Orders made by the High Court in the cases is currently in place until a further hearing by the Court of Appeal. The Orders made by the High Court in the cases include: (i) an Order quashing the SEMC Decision (SEM-22-00), and (ii) various declaratory orders. As noted above, the CRU intends to apply for a further stay on the Orders made by the High Court, pending the determination of the appeals and until the matters have been finally resolved through the Superior Courts.

SEM Committee Decision

Notwithstanding and without prejudice to the outcome of the appeals of the High Court Judgments, the SEM Committee has decided to include the potential costs associated with the High Court Judgments of €158 million in the Imperfections Charge for tariff year 2024/25. The SEM Committee's decision to incorporate the provision of such costs is to preserve the public's best interest and limit the potential impact on the consumer in future years. By commencing the collection of money in the upcoming tariff period, it will effectively smooth out potential costs over a longer period of time and will help reduce the impact of higher charges on customer bills in subsequent years. In the interest of transparency and for clarity, this decision by the SEM Committee has been taken in the event that the appeal process is unsuccessful and it is required to fully implement the High Court Judgments. The decision is therefore providing for the collection of potential costs associated with the High Court Judgments. Notwithstanding this, the CRU is appealing the High Court Judgments and there is a stay on the orders made in the cases until a further hearing by the Court of Appeal.

3.5 FEEDBACK ON THE TSOs' FORECAST COSTS ATTRIBUTED TO PUMP STORAGE UNITS

The Consultation Paper requested stakeholders' comments on the TSOs' proposed costs associated pumped storage units.

Comments Received

Of the six consultation responses received, two respondents provided feedback on the TSOs' forecasts costs associated with pump storage units.

Bord Gáis Energy suggested that the supplementary modelled costs must be tested and verified by the RAs. Furthermore, Bord Gáis proposed that where there is any doubt as to the basis for such costs and no justification is provided, such costs should be challenged and discounted. Additionally, Bord Gáis requested the RAs to confirm that these costs have not been provided for elsewhere.

FERA also commented on the proposed costs associated with pumped storage units and requested confirmation that such costs are not 'double counted' in the TSOs' forecast.

RAs' Response

The RAs acknowledge the comments made by market participants regarding the proposed costs associated with the pumped storage units. The RAs sent several queries to the TSOs regarding pumped storage units based on the comments and queries received from market participants. In response, the TSOs confirmed that the forecast pumped storage costs are not double counted, and their forecasts are based on actual Premiums and Discount paid to pumped storage units.

The RAs queried why the TSOs forecast costs associated with pumped storage units and not implicitly modelled within PLEXOS. The TSOs confirmed that although the PLEXOS

model optimises the dispatch of such units, their model does not include an associated cost and therefore a provision for its cost analysis is conducted within the TSOs' supplementary modelling process. The TSOs confirmed that they will consider the set-up of pumped storage units in future versions of their PLEXOS model.

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 2024/25 is €18 million, this is based on actual Premiums and Discounts paid to pumped storage units between 1st May 2023 and 30th April 2024. The RAs have devised an alternative method to calculate the forecast costs for Tariff Year 2024/25 and such method accounts for the more recent average costs incurred during the first six months of the current Tariff Year (2023/24). The RAs incorporated more up to date data as it is more reflective of recent market costs and should therefore be a better forecast for associated near term costs. Furthermore, the RAs note that analysis of the pump storage units did not exhibit seasonality trends. From 1st October 2023 – 31st March 2024 the average monthly cost of pumped storage units is €1,264,005. The RAs sum the average across the forthcoming 12-month tariff period and calculated the total as €15,168,060. This alternative method represents a saving of approximately €3 million.

SEM Committee Decision

Having considered the comments raised by stakeholders in relation to the TSOs' cost forecasts associated with pumped storage unit, the SEM Committee has decided that while the TSOs existing method of estimating forecast costs using ex-post costs since May 2023 may seem reasonable, the RAs alternative method is more reflective of the most recent cost trends observed associated with such units. Therefore, the SEM Committee has decided to approve the alternative lower estimated figure calculated by RAs which incorporates costs incurred during the first six months of the current Tariff Year (i.e., October 2023 – March 2024). This will therefore reduce total forecast costs

attributable to pumped storage units from €17.98m to €15.17m, representing a saving to the consumer of €2.81 million.

4. SEM COMMITTEE DECISIONS

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

1. The Tariff Year 2024/25 Imperfections Charge will be €567.21 million, equivalent to an estimated Imperfections Price of €14.62/MWh²⁰.
2. The RAs will continue to work with the TSOs to review and improve Imperfections forecasting, application and reporting (including the Mid Year Review report), with the objective of lowering consumer costs.
3. The Imperfections Charge Factor (FCIMPy) will be set to 1 for the period of 1 October 2024 to 30 September 2025, subject to any alterations following the biannual review process.

²⁰ Based on estimated metered demand 38,800 GWh