

2023/24 Imperfections

Mid-Year Review

28 March 2024 (V1.0)



Contents

1. Summary	4
2. Background	6
3. Imperfections Costs	7
3.1. Imperfections cost 01 Oct 23 to 30 Sept 24.....	7
3.2. Projected imperfections costs for 01 Mar 24 to 30 Sept 24.....	8
4. Imperfections Revenue	10
4.1. Imperfections revenue 01 Oct 23 to 30 Sept 24	10
4.2. Projection of Imperfections Revenue for 01 Mar 24 to 30 Sept 24	10
5. 2022/23 K Factor to be included in the 2023/24 tariff - Actual K factor for Y-2	11
6. Conclusion	12

Revision	Date	Description
v1.0	28/03/24	Issued to RAs

COPYRIGHT © EirGrid/SONI

All rights reserved. No part of this work may be modified or reproduced or copied in any form or by means - graphic, electronic or mechanical, including photocopying, recording, taping or information and retrieval system, or used for any purpose other than its designated purpose, without the written permission of EirGrid/SONI.

1. Summary

EirGrid and SONI are Transmission System Operators (TSOs). In this role, we take actions to ensure supply of power and system security to customers across the system in real time. The cost of these actions is known as the imperfections costs. We pay for these via the revenue we get from suppliers through the Imperfections Charges.

The purpose of this report is to describe the analysis undertaken by the TSOs mid-way through the 2023/24 Tariff Year, analysing the imperfections costs against the revenue recovered for same. This review is prepared as per the decision in [SEM-22-45](#).

The TSOs reviewed 5 months of actual imperfections costs (01 October 2023 to 29 February 2024) and revenue and prepared a revised forecast of cost and revenue for the next 7 months of the tariff year (01 March 2024 to 30 September 2024).

The estimates we provide in this Mid-Year report are based on best available data at the point of preparation (19 March 2024). The 2024/25 K factor estimates, to be prepared in May 2024 will be based on the best available data at that time and as such will differ from the data set out in this report.

Table 1 outlines our current projection of imperfections cost and revenue to 30 Sept 24.

23/24 Imperfections	Original (€m) ¹	Updated Forecast Outturn (19 March 2024) (€)	Difference
Projected Imperfections Costs	539.98	424.95	115.03
2021/22 K factor included in 2023/24 tariff	-91.17	-91.17	0.00
Total Imperfections Costs (A)	448.81	333.78	115.03
Imperfections Revenue (B)	448.81	440.68	-8.13
2022/23 K factor to be included in 2024/25 tariff ² (C)			-25.12
Overall Forecast Outturn Position ³ (Over-recovery of charges) = (A) + (B) + (C)			81.78

Table 1: 23/24 Tariff Year Projection of Imperfections Revenue and Costs to 30 Sept 24

As shown in Table 1, it is predicted that the end of Tariff Year 2023/2024 position will be c.€82m over-recovery based on current analysis.

Note: The K Factor considers adjustments from previous years, where imperfection costs were more or less than we expected. In the case of projected costs, the difference is calculated as the original forecast costs minus the updated forecast costs and hence a positive number contributes to an anticipated over-recovery as a result of lower costs than originally anticipated. For the imperfections revenue the difference is

¹ Original Numbers as per SEMC Decision SEM-23-067 - Table 1

² See section 4.3 for further details.

³ Where at the end of a tariff year period an Over Recovery is known/forecast it is subtracted from the revenue requirement in the following tariff year period. Where at the end of a tariff year period an Under Recovery is known/forecast it is added to the revenue requirement in the following tariff year period.

calculated as the updated forecast minus the original forecast and hence a negative number contributes to an anticipated under-recovery as a result of less revenue than originally anticipated.

Noting that as of today (5 months to the end of February) we are seeing an under recovery of c. €7.3m (Imperfections Actual Revenue €188.2m - Imperfections Actual Costs €195.5m) and it is only due to a future forecasting that we are seeing a flip to an over recovery position.

Prediction of imperfections costs is an inherently uncertain process. The values above are based on the TSOs median estimate. There is a degree of uncertainty around projection of actual imperfections spend, and the potential range of this spend could be between c.€348m and c.€471m. This could give rise to an associated K factor between c.€36m and c.€158m, see Table 2.

23/24 Imperfections €m	Assumed weekly spend going forward	Associated projected spend 01 Oct 23 to 30 Sept 24	Estimated K factor as of 19 Mar 24
High spend	9	470.59	36.14 over recovery
Median spend	7.5	424.95	81.78 over recovery
Low spend	5	348.31	158.43 over recovery

Table 2: 23/24 Tariff Year Projection of Range of Imperfections Costs to 30 Sept 24 and corresponding estimated K factor

In determining the projection for imperfection costs for the next 7 months, our approach has been to observe the range of recent historical costs in the past 5 months. This approach gives rise to three scenarios - high / median / low.

High - €9m per week

This is based on average weekly spend since Oct 24. It is premised on the basis that what has happened year to date will persist going forward.

Median - €7.5m per week

This is based on average weekly spend since Jan 24 (the more recent weeks given more weighting). This is premised that what has happened in recent weeks will persist going forward.

Low - €5m per week

This is based on the 2 weeks of lowest spend of Imperfection Cost since Oct 24.

Given the potential outturn volatility, the median spend forecast on the Imperfections Charge is a prudent assumption at this time and the resultant K factor of c.€82m over-recovery is in the range of previous years variance.

2. Background

In the 2022/23 Imperfections Decision Paper ([SEM-22-45](#)) the SEMC decided that “*The RAs will liaise with the TSOs to develop a biannual review⁴ of the costs covered by the Imperfections Charge. Therefore, it would be appropriate to put in place a biannual review to build on the TSOs’ Quarterly Imperfections Costs Reports and the calculations the TSOs currently use to determine the within-year K-factor. The biannual review would aim to provide a comprehensive estimate of whether any given Tariff Year is likely to result in an Imperfections Charge over or under-recovery*”.

The purpose of this report is to comply with this SEMC decision. In addition, this report would be a natural point at which a change to the Charge Factor may be proposed.

The Trading and Settlement Code (as per Mod_13_22) states that: “*The Market Operator may, of its own accord or in response to a request from the Regulatory Authorities, make an additional interim reports to the Regulatory Authorities during the Year that reviews the recovery of costs or other matters as the Regulatory Authorities may request, that may result in, proposing revisions to the Imperfections Charge Factor in the event that the values as originally proposed are, in the opinion of the Market Operator or Regulatory Authorities, likely to either: (a) do not provide for the adequate recovery of anticipated costs and such under recovery is such that it is. (b) over provide for the recovery of anticipated costs and such over recovery is such that it is not appropriate to include as an adjustment in subsequent Years.*”

The Charge Factor is a Trading and Settlement Code mechanism which allows for adjustment of the Imperfections Charge if it is apparent that the variance between cost and revenue is of a level that would not be appropriate to include as an adjustment in subsequent years. It allows for an adjustment to the Imperfections Charge to a level which that may more accurately reflect costs to revenues. It is intended to enable the revenues required to be recovered within the given year and thus minimise the K-factor for the relevant Tariff Year.

The TSOs also publish a Quarterly Report (published on [EirGrid](#) and [SONI](#) websites). This reports on imperfections costs against the **original forecast costs**. For the sake of clarity, this Mid-Year Report compares cost against **revenue** while the Quarterly Report compares against the **original forecast cost**. The comparison of costs against revenue (rather than cost against forecast cost) ensures an accurate view of the net position rather than a one-sided cost-only position.

It should be noted that the analysis in this report is based purely on a cash-flow comparison of imperfections cost against imperfections **revenue**. This comparison is aligned with how the K factor is determined.

⁴ The title “biannual review” is now referred to as “Mid-Year Report” to reflect the intention that it is produced approximately at the mid-point (after 5 months of data) of the Tariff Year.

3. Imperfections Costs

3.1. Imperfections cost 01 Oct 23 to 30 Sept 24

We have estimated the imperfections costs up to 30 Sept 24.

This was done by combining:

- actual cost for 01 Oct 23 to 29 Feb 24,
- projected costs from 01 Mar 24 to 30 Sept 24 based on recent historic data.

23/24 Imperfections	1 Oct 23 to 30 Sep 24 (€m) as of 19 March 2024
Imperfections Actual Cost (01 Oct 23 to 29 Feb 24)	195.45
Imperfections Projected Cost (01 Mar 24 to 30 Sept 24)	229.50
Total Imperfections Tariff Cost - Forecast for year end	424.95

Table 3: Imperfections Cost - Forecast for year end.

As shown in Table 4, we then compared these updated imperfections cost projection to the approved *ex ante* assumed revenue requirement (excluding the K Factor). This analysis suggests that the outturn costs may be lower than the original forecast by c.€115m. However, in assessing the likely outturn position, in terms of the potential 2023/2024 K-factor, the 2023/2024 revenues and actual 2022/2023 K factor position must also be taken into consideration. This is addressed later in this paper in Section 4 and 5.

22/23 Imperfections	1 Oct 22 to 30 Sep 23 (€m) (19 March 2024)
Imperfections original Costs SEM-23-067	539.98
Imperfections revised Cost	424.95
Total Delta	115.03

Table 4: Imperfections Cost - Forecast for 2023/2024 tariff year end.

3.2. Projected imperfections costs for 01 Mar 24 to 30 Sept 24

In determining the projection for imperfection costs for the next 7 months, our approach has been to observe, the range of recent historical costs. The profile of recent weekly spend is shown in Figure 1 below. As there is a degree of uncertainty inherent in the projection of imperfection costs, we have prepared a range of possible costs.

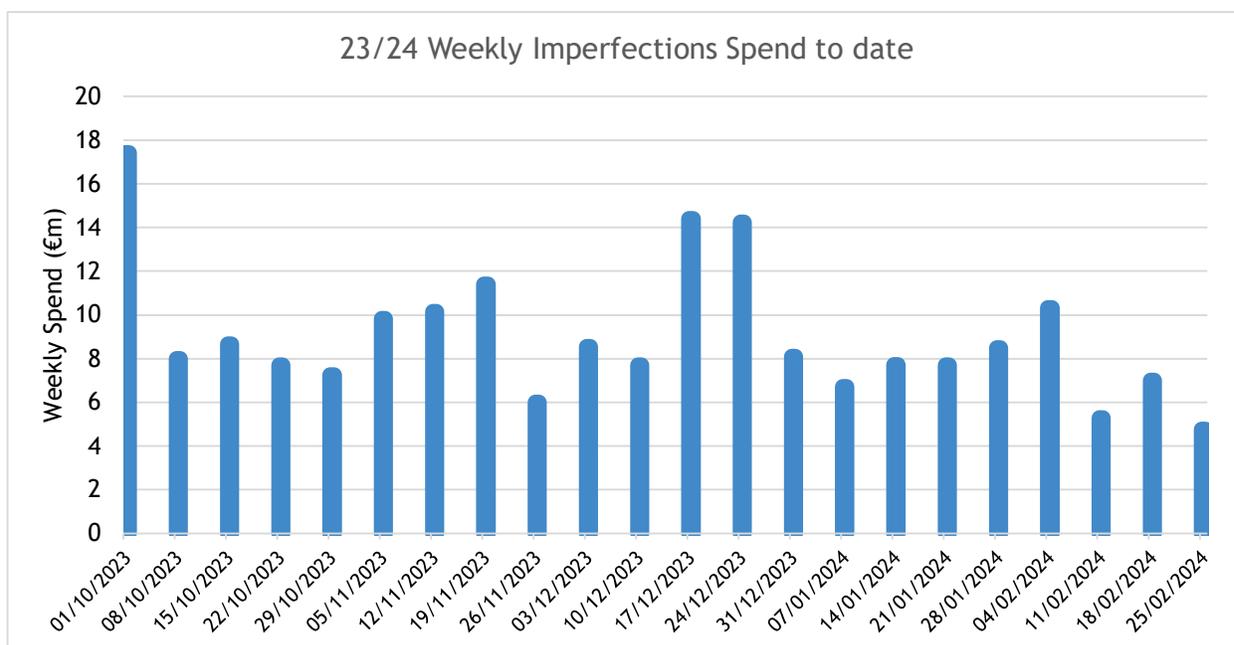


Figure 1: First 22 Weeks of Imperfection Cost for 23/24

High - €9m per week

This is based on average weekly spend since 01 Oct 23. It is premised that what has happened year to date will persist going forward. We have taken the average YTD spend as the high (rather than the high range) as we have observed in previous years that the summer spend tends to be lower than winter.

Median - €7.5m per week

This is based on average weekly spend since Jan 24 (the more recent weeks given more weighting). This is premised that what has happened in recent weeks will persist going forward.

Low - €5m per week

This is based on the 2 weeks of lowest spend of Imperfection Cost since Oct 24.

The below is a high, median, and low estimate of projected costs until 30 Sept 24.

Projected Imperfections Cost 01 Mar 24 to 30 Sept 24	€m per Week	Associated spend 01 Oct 23 to 30 Sept 24	projected
High	9		470.59
Median	7.5		424.95
Low	5		348.31

Table 5: Projected Imperfections Costs -01 Mar 24 to 30 Sept 24

Some of the factors which impact imperfections costs include wholesale fuel costs; levels of wind/solar; outages (of both generators and transmission network) and operational constraints. The actual imperfection costs will be a function of all these (and other) variables, with no single variable having dominant explanatory power.

In our view, historical data serves as the most reliable indicator for estimating imperfection costs over the next 7 months. As the actual imperfections spend is a function of a multitude of factors, with no single variable having dominant predictive power. Therefore, isolating any individual variable as the indicator, would lack meaningful context.

4. Imperfections Revenue

4.1. Imperfections revenue 01 Oct 23 to 30 Sept 24

The outturn imperfections revenue, recovered via the Imperfection Charge, up to 30 Sept 24 was estimated by combining actual revenue for 01 Oct 23 to 29 Feb 24 with our most recent projection of what costs from 01 Mar 24 to 30 Sept 24 will be, shown in Table 6.

23/24 Imperfections Tariff Revenue	1 Oct 23 to 30 Sep 24 (€m) (19 March 2024)
Original Tariff Revenue Requirement (Includes K-factor of -€91.17m as per SEM-23-067)	448.81
Imperfections Actual Revenue (01 Oct 23 to 29 Feb 24)	188.22
Imperfections Projected Revenue (01 Mar 23 to 30 Sept 24) Projection based on typical monthly energy profile	252.47
Imperfections Tariff Revenue - Forecast for year end	440.68

Table 6: Imperfections Revenue - Forecast to year end.

As shown in Table 7, we then compared our imperfections revenue projection to the *ex-ante* Approved Revenue.

23/24 Imperfections	1 Oct 23 to 30 Sep 24 (€m) (19 March 2024)
Original Tariff Revenue Requirement (Includes K-factor of -€91.17m as per SEM-23-067)	448.81
Imperfections Tariff Revenue - Forecast for year end	440.68
Revenue under recovery (i.e. Forecast minus Original)	(8.13)

Table 7: Imperfections Revenue Projection compared to Approved Revenue

Thus, we expect to collect less money (c.€8m) over the 2023/2024 tariff year period to fund imperfections costs, then originally envisaged would be collected. The driver for this currently forecast under recovery is due to the outturn demand on which charges are levied and recovered. The forecast demand employed to set the imperfections charges was 38,950 GWh. Actual demand as at the point of the Mid-Year review (estimated at 16,338 GWh based on meter readings at that point in time) and as reflected in the actual revenues received at the end of February is lower than the forecast would have envisaged.

4.2. Projection of Imperfections Revenue for 01 Mar 24 to 30 Sept 24

Our projection of imperfection revenue was based on a consideration of:

- Actual energy consumed between 01 Oct 23 and 29 Feb 24 (which as noted above is below what would have been anticipated based on the underlying forecast demand)
- Typical energy consumed by month (we assume 43% of energy is consumed between 01 Oct 23 and 29 Feb 24 and 57% is consumed between 01 Mar 24 and 30 Sep 24, based on the ratios from historic data).
- The meter data is subject to M+4 and M+13 resettlement. Our end of year position with respect to demand and revenue will always be different from actual initial figures and/or any projections we make in advance.

5. 2022/23 K Factor to be included in the 2023/24 tariff - Actual K factor for Y-2

The Imperfections Charge is calculated based on the projected Imperfections Costs for year Y inclusive of the forecast K factor which may be positive or negative. The k-factor is calculated based on the actual K factor for Y-2 and an estimated within year K factor for Y-1.

In terms of the tariff year 2023/2024 Imperfections Charge, as reflected in Table 1, the K-factor applied in the Original 2023/2024 decision was €91.17m (i.e. an over-recovery). This reflected the net of the actual K factor for tariff year 2021/22 (an under recovery of €28.83m) and a forecast within year K-factor for 2022/2023 (an estimated over recovery of €120m)⁵.

Description	€m
Actual Y-1 Actual K Factor - 2021/22 K is an Under recovery	(28.83)
Estimate within Year K Factor - 2022/23 K Factor forecast Over Recovery	120.00
Total Forecast Imperfections K Factor for inclusion in the 2023/24 tariffs (net Over Recovery)	91.17

Table 8: K Factor included in 2023/24 tariffs.

The true K-factor arising for 2022/2023 was lower than forecast, an over recovery of €98.44m. The delta between the forecast 2022/2023 K-factor and the true 2022/2023 K-factor results in an under recovery of €25.12m. In effect the tariff has been set net of monies not actually recovered. This 2023/2024 tariff year net position will be taken into account when the TSOs calculate the K-factor to be applied to the 2024/2025 Imperfections Charge. However, it is important that this K-factor position is considered in the mid-year review. As to omit same would in this event overstate the TSO forecast cash position at the end of the 2023/2024 tariff year period.

Description	€m
Actual outturn over/(under) recovery for 2022/23 (true k-factor arising in year)	94.88
An estimated over recovery of €120m was included in calculating the tariff for 2023/24, this must be taken into account to arrive at what is left to be taken into account in setting the k factor for 24/25	-120
2022/23 k-Factor to be included in 2024/25 tariff	-25.12

Table 9: K Factor included in 2024/25 tariffs.

⁵ Ref. Table 3 of SEM-23-067

6. Conclusion

A summary of our projected end of 2023/2024 Tariff Year imperfections cost and revenue is shown in Table 10. We anticipate an over-recovery of c.€82m.

23/24 Imperfections	Updated Forecast Outturn 1 Oct 23 to 30 Sep 24 (€m) (19 March 2024)
Projected Imperfections Revenue	440.68
Less k-Factor (as per SEM-22-45)	91.17
Projected Imperfections Costs	-424.95
2022/23 k-Factor to be included in 2024/25 tariff	-25.12
Overall Forecast Outturn Position⁶ - Over recovery for tariff year 2023/2024	81.78

Table 10: 23/24 Tariff Year Projection of Imperfections Revenue and Costs to 30 Sept 24

However, it should be noted that prediction of imperfections costs is an inherently uncertain process. The values above are based on the TSOs median estimate. There is a degree of uncertainty around projection of actual spend, and the potential range of spend could be between c.€348m and c.€471m, which could give rise to associated K-factor between c.€36m and c.€158m.

23/24 Imperfections €m	Assumed weekly spend going forward	Associated projected spend 01 Oct 23 to 30 Sept 24	Corresponding Estimated k factor as of 19 Mar 24
High spend	9	470.59	36.14 over recovery
Median spend	7.5	424.95	81.78 over recovery
Low spend	5	348.31	158.43 over recovery

Table 11: 23/24 Tariff Year Projection of Range of Imperfections Costs to 30 Sept 24 with corresponding estimated K factor

The median spend forecast is a prudent assumption at this time and the resultant over-recovery k-factor of c.€82m is in the range of previous years variance. An updated K-factor position will be considered in the setting of the 2024/2025 Imperfections Charge later in the year.

⁶ Where at the end of a period an Over Recovery is known/forecast it is subtracted from the revenue requirement in the following period. Where at the end of a period an Under Recovery is known/forecast it is added to the revenue requirement in the following period.