ACER

European Union Agency for the Cooperation of Energy Regulators

Report on the implementation of the inter-transmission system operators compensation mechanism in 2024

22 December 2025

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Table of contents

Executive summary

EUR 879.9 million fund	-28% drop in loss costs	Ukraine joins the ITC mechanism
Following its jump in 2022-2023, the ITC fund declined by 29% in 2024, mostly due to a drop in electricity losses costs.	The average value of electricity losses decreased by 28% to 145.97 EUR/MWh, following wholesale prices' trends.	In July 2024 Ukrenergo, the Ukrainian TSO, became part of the ITC mechanism.

1 The European Union power system is increasingly used for cross-border flows. The Inter-Transmission System Operator Compensation ('ITC') mechanism, coordinated by the European Network of Transmission System Operators for Electricity ('ENTSO-E'), forms part of Europe's electricity infrastructure cost-sharing mechanisms alongside cross-border cost allocation and congestion income distribution, that allows the sharing of the costs and benefits arising from cross-border trades. In particular, the ITC mechanism compensates transmission system operators (TSOs) that are part of the ITC agreement ('ITC Parties') for the costs resulting from hosting cross-border transit flows, such as power losses and network investments.

2 In this report, ACER assesses the implementation of the mechanism in 2024 and finds the following:

Factual developments

- The ITC mechanism has not encountered any major amendment in 2024 affecting its main elements.
- In July 2024, Ukrenergo, the Ukrainian Transmission System Operator, effectively joined the ITC Agreement.
- Following its jump in 2022 and in 2023, the ITC fund declined in 2024, from €1.14 billion to €879.9 million, representing a 29% contraction from the previous year. The volatility was caused by the swing of electricity wholesale prices during the period of 2021-2023, impacting on losses costs, accordingly.
- The value of losses determining the variable component of the fund decreased for 28 (i.e. 80%) of the relevant ITC Parties in 2024 compared to 2023[1]. For the remaining ITC Parties the value was higher or the same. Overall, the volume-weighted average value of losses decreased by 28% to 145.97 EUR/MWh from 201.56 EUR/MWh.
- Similar to previous years, the value of losses significantly varies between EU ITC parties, in 2024, ranging from 63 EUR/MWh (Finland) up to 259 EUR/MWh (the Netherlands). The actual values of losses in 2024 also show significant differences across the assessed EU ITC Parties, ranging from about 36 EUR/MWh (Sweden) up to about 184 EUR/MWh (Germany)[2]. The differences across the countries seem to be rooted both in different calculation methodologies and different losses procurement strategies.

[1] These statistics account only for ITC Parties which had already been part of the ITC mechanism in 2023.
[2] For Denmark and Luxembourg no data on actual losses costs was provided for 2024.

- ACER notes stable trends regarding the concentration of net compensations from and contributions to the ITC Fund among a few ITC Parties, with six receiving about 75% of the total net compensation and three paying more than half of the total net contributions.

- Non-ITC perimeter countries connected to the ITC Parties' networks in 2024, including Belarus, Morocco, Russia, Turkey, Moldova, and Ukraine[3] contributed 20.37 million EUR to the ITC fund, representing 2.3% of the total amount. This increase, in both absolute and relative terms compared to last year, occurred despite a decrease in the perimeter country fee. The reason behind is a significant increase in scheduled export/import flow energy volumes between ITC Parties and perimeter countries in 2024 which were almost 50% higher compared to the previous year.

Procedural improvements

- ENTSO-E changed the internal audit process by using ACER data regarding the national criteria for valuation of losses as well as requiring more detailed documentation and setting higher standards for information quality[4]. The new measures may have contributed to the reduced number of input value changes observed during the data validation process.

- ENTSO-E envisages to implement a new data quality dashboard to efficiently track data quality[5] and investigating the introduction of a new signature process for ITC settlements to address ongoing delays.

Overall conclusion

- In lack of any major change affecting its main elements, ACER finds that the ITC mechanism in 2024 is generally aligned with the legal requirements set out in Regulation (EU) 2019/943 and Commission Regulation (EU) 838/2010. Nevertheless, methodological improvements are still seen as necessary by ACER in line with its Recommendation No 01/2023 to ENTSO-E, TSOs and NRAs[6].

- ACER acknowledges ENTSO-E's efforts in evaluating ACER's recommendations regarding the increase of the number of snapshots used for the estimation of the volume of losses due to transits as well as the ex-post determination of the values of losses proposal[7]. However, ACER regrets that the ITC implementation in 2024 did not incorporate any of the proposed improvements.

Broader considerations

- As underlined in previous ACER report, the ITC mechanism falls short in equitably sharing infrastructure cost and benefits arising from cross-border trade, which may affect the development of the necessary infrastructure investments[8]. ACER is currently carrying out a holistic review of the existing mechanisms to share costs and benefits of electricity network infrastructure arising from cross-border trade. One key objective is to better reflect the wider EU benefits of infrastructure, including internal and cross-border flows to facilitate or promote infrastructure investments beyond the national interest and needs.

[3] Ukraine was a perimeter country only for the first semester of 2024 (January to June 2024).
[4] ACER Report on the implementation of the ITC mechanism in 2023.
[5] The new data quality dashboard aims for a close-up monitoring on timing delivery of snapshots and corrections needed to fix mismatches and file issues.
[6] The recommendations call for: Increase of the number of snapshots used for the estimation of the volume of losses due to transits; ex-post reconciliation of the costs of losses due to transits should be applied in the ITC mechanism, to reflect the costs actually incurred; and Consideration of liquid forward-market prices instead of historical prices for determination of the relevant components of the value of losses for the ITC mechanism, where relevant.
[7] ACER Recommendation 01/2023 on the treatment of losses for the purpose of the ITC mechanism.
[8] ACER and CEER, 2024, Challenges of the future electricity system - Recommendations and commitments.

1. Introduction

3 The Inter-Transmission System Operator Compensation ('ITC') mechanism provides transmission system operators ('TSOs') with compensation for the costs of hosting cross-border flows of electricity ('transits'). The ITC scheme is defined in Article 49 of Regulation (EU) 2019/943 (the 'Electricity Regulation') and it was implemented on 3 March 2011 by the Commission Regulation (EU) No 838/2010 (the 'ITC Regulation').

4 The compensation is financed through the ITC Fund, which consists of two parts which aim at covering the costs of the incurred transmission losses and the costs of making infrastructure available for cross-border flows.

5 TSOs or groups of TSOs, which are treated as a single unit participating in the ITC mechanism ('ITC Parties'), receive compensation from the ITC Fund based on the transits they carry and contribute to the ITC Fund based on their net import and net exports.

6 Non-participating countries connected to the ITC Parties' networks ('perimeter countries'[9]) pay a transmission system use fee for their scheduled imports from and scheduled exports to the ITC Parties' networks ('perimeter countries' fee').

7 The implementation of the ITC mechanism and the management of the ITC Fund is carried out by ENTSO-E through the legal framework of the ITC Clearing and Settlement Multi-Year Agreement ('ITC Agreement') concluded on 9 February 2011. The ITC Agreement contractually sets out detailed ITC procedures[10] as well as ENTSO-E's and ITC Parties' duties and entitlements[11].

8 The European Union Agency for the Cooperation of Energy Regulators ('ACER') has the general duty to oversee the implementation of the ITC mechanism and report to the European Commission each year on the implementation of the ITC mechanism and the management of the ITC fund[12]. ACER has the specific responsibility to verify the criteria for the valuation of losses at national level taking particular account that losses are valued in a fair and non-discriminatory way[13].

9 ACER has reviewed the implementation of the ITC mechanism and the management of the ITC Fund in 2024 based on:

- the ITC Agreement and its amendments;
- relevant data and information received from ENTSO-E on 15 September 2025, 6 October 2025 and 28 November 2025 in relation to the implementation of the ITC mechanism in 2024[14]; and
- information from the National Regulatory Authorities ('NRAs') on the country-specific data on the values and valuation of losses provided to ACER between 27 October 2025 and 4 December 2025.

[9] Belarus, Moldova, Morocco, Russian Federation, Turkey.
[10] It includes submission, validation of data, calculation of compensation and contribution amounts, and the clearing and settlement of the ITC Fund.
[11] TSOs from all EU Member States except Cyprus and Malta, the EEA EFTA State Norway, and other non-EU countries such as Albania, Bosnia and Herzegovina, Kosovo, North Macedonia, Montenegro, Serbia, Switzerland, Ukraine and the United Kingdom (Great Britain and Northern Ireland stand as separate ITC parties).
[12] Cf. point 1.4 of Annex Part A of the ITC Regulation. Previous ACER ITC Monitoring Reports are available on ACER's website.
[13] Cf. point 4.4 of Annex Part A of the ITC Regulation.
[14] Data and explanations of the results for the 2024 ITC mechanism that were submitted cover: the explanations on reduced transits submitted by each relevant ITC Party; the overview of audit results, approved values and exchanges between ITC Parties; the calculation of the perimeter countries' fee; the decisions on the values of losses in non-EU countries; the computation of losses resulting from transit flows; the amendments of the ITC Agreement.

2. General implementation of the 2024 ITC mechanism

10 ACER observes the following technical yearly amendments of the ITC Agreement in 2024:

- updated schedules due to yearly updates (Schedule P: ENTSO-E convention on Business Day);
- results of the last ITC audit (Schedule T: List of used Yearly vertical loads, Schedule X: Table of losses costs, Schedule O: Ex-Ante Financial Spreadsheet);
- updated schedules due to new tie-lines between ITC Parties (Schedule U: List of lines and measurement points);
- contact details (S).

11 ACER observes that some amendments in the ITC implementation in 2024 were required as Ukrenergo, the Ukrainian TSO, has effectively became an ITC Party in July 2024 after signing the adherence form in May 2023. ENTSO-E reported that this integration within the year had a significant impact on the process, which is normally defined on yearly basis. The integration of Ukraine resulted in the split of the yearly data into two separate datasets, one without Ukraine (January-June 2024) and one with Ukraine (July-December 2024), with necessary adjustments of some input data (e.g. perimeter country fee).

12 ACER notes that the ITC Agreement has not changed regarding the general treatment of the ITC Parties, including TSOs from those third countries which have adopted and apply European Union law in the field of electricity as well as TSOs from third countries which have not concluded such agreements with the EU, but participate in the ITC through a voluntary multi-party agreement. Thus, the former findings and conclusions of ACER are still valid[15].

13 ACER concludes that the amendments made in the ITC agreement do not affect its main elements and the general arrangements are still in line with the guidelines set out in Regulation (EU) 2019/943 and the ITC Regulation. However, ACER sees the need to introduce methodological improvements in line with ACER Recommendation No 01/2023 on the Treatment of Losses for the Purpose of the ITC Mechanism[16] including:

- increase of the number of snapshots used for estimation of the volume of losses due to transits to increase representativeness of the snapshots;
- ex-post reconciliation of the costs of losses due to transits to be applied in the ITC mechanism, to reflect the costs actually incurred; and
- consideration of liquid forward-market prices instead of historical prices for determination of the relevant components of the value of losses for the ITC mechanism, where relevant.

14 ACER regrets that for the 2024 ITC mechanism these recommendations were not implemented.

15 ENTSO-E carried out an assessment with different number of snapshots for the estimation of the volume of losses and shared its main outcomes with ACER in November 2024. The assessment called "*Moving towards higher granularity snapshots*" found no significant improvement in accurately capturing the volume of transits when improving the number of snapshots from 6 to 12 or 24 per month. ENTSO-E's Market Committee deemed that the drawbacks (including maintenance of data quality and the need of additional IT solutions to manage the new workload) outweighed the benefits and decided not to increase the snapshots for the 2024 ITC mechanism.

[15] In 2012, ACER noted that the ITC Agreement makes no distinction between categories of ITC Parties, whether the latter participate on a compulsory or voluntary basis under point 2 of Annex Part A of the ITC Regulation or through voluntary multi-party agreements under point 3. Therefore, ACER concludes that the requirements of points 3.2 and 3.4 of Annex Part A of the Regulation are met.

[16] ACER Recommendation 01/2023 on the treatment of losses for the purpose of the ITC mechanism.

16 While ACER acknowledges the related difficulties in increasing the number of snapshots, ACER is still of the view, that this is a meaningful effort in ensuring a better accuracy of the estimation of the volume of losses directly impacting the size of the ITC losses fund and reiterates its recommendation to ENTSO-E and TSOs to amend the ITC agreement by increasing the number of snapshots used for the estimation of the volume of losses due to transits for the purpose of the ITC mechanism, to an extent which ensures representativeness of the snapshots[17].

17 On the determination of the cost of transmission losses, ENTSO-E carried out a comparative analysis of different strategies for valuing losses. The main findings of ENTSO-E are summarised in Figure 1. Based on their recommendations in the "*Roadmap for a Common Methodology on Losses for ITC*[18]", ENTSO-E's preferred option is a common methodology which relies on monthly ex-post settlements based on a mix of forward and spot prices for which the weights would be the same for all ITC Parties. In ENTSO-E's assessment the implementation of this solution would require reopening the ITC Regulation. ENTSO-E is also investigating the feasibility of calculation of perimeter fees under an ex-post approach.

18 ACER welcomes ENTSO-E's continued efforts on evaluating ACER's recommendations and urges ENTSO-E to strive towards their implementation.

Figure 1: Pros and cons of different transmission losses valuation strategies (ACER's summary of ENTSO-E's assessment received in November 2023)

	Pros	Cons
Ex-post real cost of losses for the given year	• Reflect real losses cost • In line with ITC Regulation in countries where ex-post settlement applies • Non-discrimination between domestic and foreign grid users	• Debate on what is included in the price and who defines the price • More complex auditing process • Some regulatory regimes do not evaluate the ex-post losses cost (e.g. due to claw back mechanisms or losses are paid by suppliers as "in-kind")
Forward prices	• Partially reflects hedging strategies • Do not require auditing as the forward prices are determined by the market • Only one settlement as the forward price is determined upfront	• Need for proxy for forward prices in countries with no forward market • May not reflect real losses cost, depending on the procurement strategy
Spot prices	• All wholesale markets have a spot price • Using spot prices is partially compliant with ex-post valuation of losses • Simpler auditing process	• Reflect actual prices for purchases on the spot market, but not on balancing market* • Do not reflect real losses cost for ITC-Parties that hedge • Ex-post determined spot prices could call for additional adjustment between preliminary and final monthly settlements
Mix of spot and forward price	• Single agreed compromise ratio between spot and forward price can balance trade-off between different procurement strategies • Increasing fairness by only partially sharing among the ITC Parties the risk of the chosen procurement strategy. • Using spot prices is partially compliant with ex-post valuation of losses • Simpler auditing process	• May not reflect real losses cost, depending on the procurement strategy • Ex-post determined spot prices could call for additional adjustment between preliminary and final monthly settlements

** However, spot prices are a good proxy of real losses costs in a market with no fluctuation in electricity prices.*

[17] ACER Recommendation No 01/2023 on the treatment of losses for the purpose of the ITC mechanism.
[18] Roadmap for a Common Methodology on Losses for ITC, version approved by the Market Committee for external use, 28 November 2023, shared with ACER on 12 November 2023.

3. Assessment of data accuracy

19 ENTSO-E reported no missing or insufficient quality data in the 2024 ITC settlement.

3.1. Audit process

20 Through the ITC Agreement, two TSOs (Amprion GmbH and Swissgrid AG) are appointed as 'ITC Data Administrators' to manage relevant data and to carry out the clearing and settlement.

21 The ITC Agreement includes yearly and monthly data audits and/or validation procedures involving all ITC Parties.

22 Every year, before the financial settlements begin, an audit of the vertical load, the value of losses and the capacity not allocated in a manner compatible with the congestion management guidelines[19] is carried out. The audit has two phases:

- During the first self-revision phase, ITC Parties are asked to either confirm their value or provide a revised figure,
- During the second phase, each ITC Party may request an explanation on any other ITC Party's value. If the provided explanation is deemed insufficient by the requesting Party, the responding Party should provide a document certifying that the relevant data was determined in compliance with definitions of the ITC procedure and requirements of the ITC Agreement.

23 During the year, before the monthly settlements are issued, several data validation procedures are performed involving all ITC Parties.

24 In 2023, ENTSO-E's Market Committee approved a Guidance document on the audit procedure[20], aimed at reducing the risk of misalignment and potential disputes among ITC Parties as well as a Methodology, which details ENTSO-E's estimation of the value of losses for the purpose of the ITC mechanism for case (ii) countries, i.e. where the relevant NRA has not approved a basis for the calculation of losses.

25 In its Report on the ITC mechanism in 2023[21], ACER positively evaluated ENTSO-E's measures in improving transparency[22] and strengthening the audit process[23]. ACER notes that the additional guidance documents seem to mitigate any potential misalignment between the ITC Agreement and the ITC Regulation. This potential misalignment specifically concerns the definition of the requirements to be considered a "case(i)" country (i.e., where the relevant NRA has approved a basis for the calculation of losses)[24]. For the EU ITC Parties, this issue does not occur because the ACER data are used, which in any case follow the definition set out in the ITC Regulation.

26 ACER takes note of the further improvements to the ITC Mechanism envisaged by ENTSO-E:

[19] Initially, the applicable congestion management methods were set out in Point 2 of Annex I of Regulation (EC) No 714/2009 was valid until 31 December 2019. Since 1 January 2020, Regulation (EU) 2019/943, which shall apply (in particular Article 16 on general principles of capacity allocation and congestion management and Article 17 on allocation of cross-zonal capacity across timeframes).
[20] Document approved by the Market Committee on 21 February 2023.
[21] ACER Report on the implementation of the ITC mechanism in 2023. Page 11-12.
[22] ENTSO-E makes a yearly request to all TSOs (including non-EU parties) to provide in advance some evidence of regulatory approval and to submit it as part of the data provided in the first phase of the Audit (i.e. at the same time as the confirmation or update of annual losses costs).
[23] Introduction of ACER data regarding the criteria for the valuation of losses and additional reporting duties by non-EU ITC Parties as regards regulatory approval of submitted data
[24] The ITC Agreement refers to the losses value as the one approved in the tariff setting process, while the Regulation has a wider scope by referring to the values being calculated on the same basis as that approved of by NRAs for all losses on the national transmission systems. ENTSO-E reported that ITC parties do not see the need to amend the ITC Agreement in that regard.

- ENTSO-E plans to implement a new data quality dashboard assuring a close monitoring on timely delivery of snapshots and corrections needed to fix mismatches;
- ENTSO-E considers the introduction of a new signature process for ITC settlement to reduce delays. The new process aims to streamline how settlements are sent and signed ensuring greater efficiency for both ITC parties and the Data Administrators.

27 ACER confirms that the self-governance arrangement in the operation of the ITC mechanism is still a broadly appropriate approach for assuring the accuracy of the operation of the ITC mechanism.

3.2. Results of the audit in 2024

28 ENTSO-E informed ACER that during the Audit process of the ITC mechanism 2024, no errors for vertical load values were found. However, after the completion of the Audit process for the year 2024, an ENTSO-E internal analysis detected that the values of yearly vertical load submitted by the Hungarian and the Luxembourgish ITC Party were not correct and required some amendments[25].

29 ENTSO-E informed ACER that during the audit process of the ITC mechanism 2024, no errors regarding the capacity allocated in a manner not compatible with the Congestion Management Guidelines were found.

30 ENTSO-E informed ACER that during the audit process of the ITC mechanism 2024, the initially submitted values of losses were clarified or updated as follows:

- The first phase of the Audit process, which allows updates of the submitted data with explanatory notes, resulted in 15 changes in the costs of losses[26], all approved by NRAs;
- The second phase of the Audit process resulted in 30 individual requests from ITC Parties to other ITC Parties in relation to the cost of losses for 2024, representing 11 requests fewer than the 41 requests in 2023. Out of the 30 individual requests, the most queried ITC Parties included Germany (7), Switzerland (5) and the Netherlands (5), while the most questions came from Norway (8) and Poland (7). In 2024, there were no unsatisfactory answers.

31 ACER notes that case (ii) methodology (i.e. where the relevant NRA has not approved a basis for the calculation of losses) was not applied in 2024. ENTSO-E confirmed that ACER's Report on 2023 ITC implementation was used as a base input in the ITC audit and the case(ii) country identification. Pursuant to this, no case(ii) country was identified for the 2024 ITC implementation.

[25] The value submitted by the Hungarian ITC Party ('MAVIR') was 33,435.07 GW instead of an actual value of 33,435.37 GW, most likely caused by a transposing error according to ENTSO-E. Following a plausibility check, the validated yearly vertical load figure for Luxembourg was updated to 3837 GW from 2547 GW.
[26] CH, EE, ES, FI, GB, HU, IT, ME, MK, NO, PL, PT, RO, RS, UA.

4. Assessment of factual developments of the ITC fund

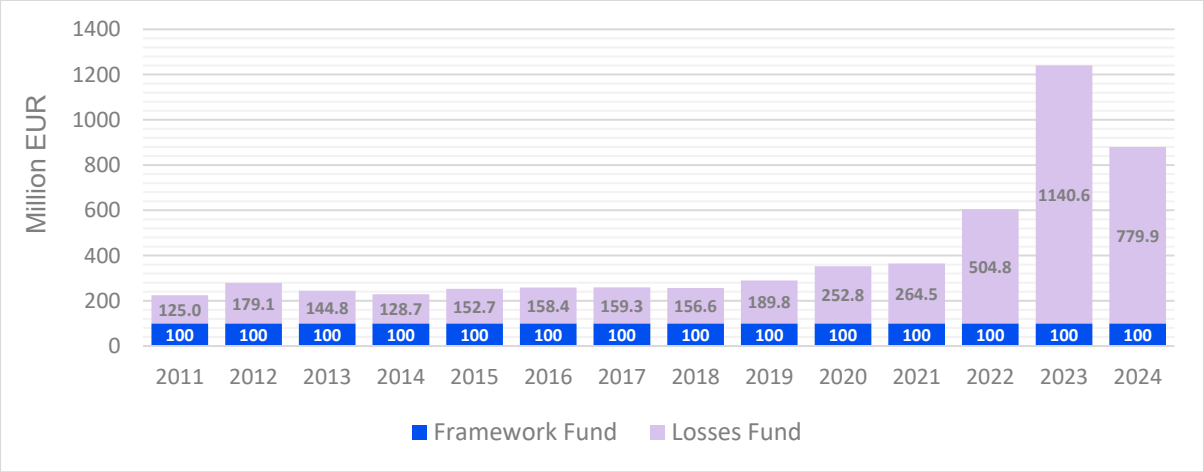
32 In 2024, the ITC Fund amounted to 879.9 million EUR, consisting of 100 million EUR related to the costs of the transmission infrastructure made available for transits and 779.9 million EUR related to the costs of the incurred transmission losses due to transits. 859.6 million EUR or 97.7% of the total ITC fund was recovered through contributions from the ITC Parties and the remaining 20.3 million EUR or 2.3% through the perimeter countries' fees.

33 As presented in Figure 2, after being relatively stable between 2015 and 2018, the ITC fund has continuously increased from 2018 to 2023, and after an exponential jump in 2022, reached its highest ever amount in 2023. Compared to its size in 2023, it decreased by about 29% in 2024. This trend was mainly driven by changes in the average value of losses and, to a lesser extent, due to changes in the overall volume of losses.

34 The amount of the infrastructure part of the ITC fund (i.e. 'Framework Fund') is set by the Regulation and has not changed its value since the establishment of the ITC fund.

35 The amount of the losses part of the ITC Fund (i.e. 'Losses Fund') decreased by about 32% from 2023 to 2024, although still being more than four times higher compared to five years ago.

Figure 2: ITC Fund size between 2011 and 2024



36 An overview of the compensations drawn from, and contributions made to the 2024 ITC Fund is provided in Table 1 in the Annex. The table includes the contributions from both the ITC parties and perimeter countries.

37 The difference between the compensations drawn from, and contributions made to the ITC Fund by an ITC Party in a particular year provides its net position (i.e. net compensation from or net contribution to the ITC Fund).

38 The share of net compensation and net contribution of each ITC Party (which are calculated as the net compensation/sum of all net compensations and as the net contribution/sum of all net contributions) in 2024 is presented in Figure 3 and Figure 4 respectively. The corresponding shares for 2023 are also added to these figures. Negative values in these figures indicate a shift in an ITC Party's role from net receiver to the net contributor one or vice versa.

39 The total net compensation (which equals to the total net contribution) in 2024 amounted to 297.2 million EUR, resulting in a 22% reduction compared to the 379.8 million EUR from the previous year.

40 As shown in Figure 3, in 2024, six ITC Parties (in order of size of net compensation: PL, DE, CZ, DK, CH, SK) received about three-quarters of the total net compensation. All six ITC Parties received net compensations in 2023 as well.

41 Regarding net contributions, as shown in Figure 4, six ITC Parties (in order of size of net contributions: IT, GB, FR, NO, SE, PT) paid more than 80% of the total net contributions in 2024. Except one (FR) all six ITC Parties provided net contributions in 2023 as well.

42 As shown in Figure 5, four ITC Parties (EE, FR, LT, RS) have a different position compared to 2023 as they shifted from a net receiver to a net contributor and one ITC Party (NL) from a net contributor to net receiver. The position of the vast majority of the ITC Parties remained the same as last year, although for some the share considerably increased or decreased compared to last year[27].

43 Major changes in net positions may be explained by changes in transit flows and/or by changes in the value of losses applied. In case of the Dutch ITC Party the value of losses used for the ITC mechanism increased by 153% in relative terms, from 102.19 EUR/MWh to 258.75 EUR/MWh. For the other 4 countries which changed net position, the changes in the determining values (i.e. losses cost and losses volumes) were much less significant.

44 Table 2 in the Annex shows the final net positions of each ITC Party for the last five years. For 14 out of 35 ITC Parties[28] (40%), the direction of the net balance has changed at least once in the last five years (i.e. they changed their position from net contributor to net receiver or vice versa at least once). For the remaining 22 ITC Parties (60%), the direction of their net balance has not changed from 2019 to 2024.

[27] Out of the net contributions, the highest changes in shares are observed for GB (from 7% to 15%), FI (from 0.1% to 1.8%). Out of the net receivers, the highest changes in shares are observed for PL (from 11.4% to 21.1%), DE (from 3.6% to 11.9%), CZ (from 8.5% to 11.6%), NI (from 0.3% to 1.0%), ME (from 1.1% to 1.8%).

[28] HR, EE, FI, FR, DE, HU, KS, LV, LT, NL, MK, NI, RS, ES. Note: Ukraine is not included in these statistics as it was not part of the 2023 ITC implementation.

Figure 3: Share of net compensation per ITC party within total net compensation in 2023 and 2024

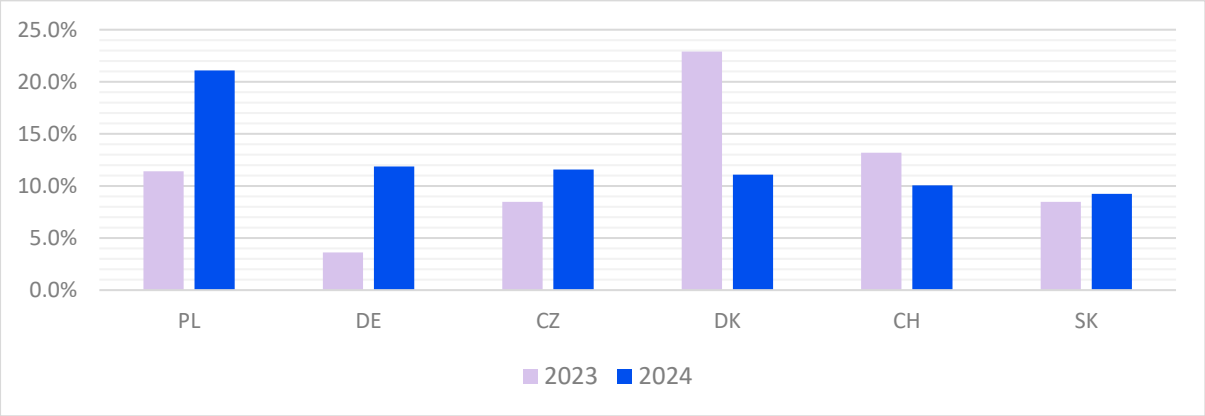
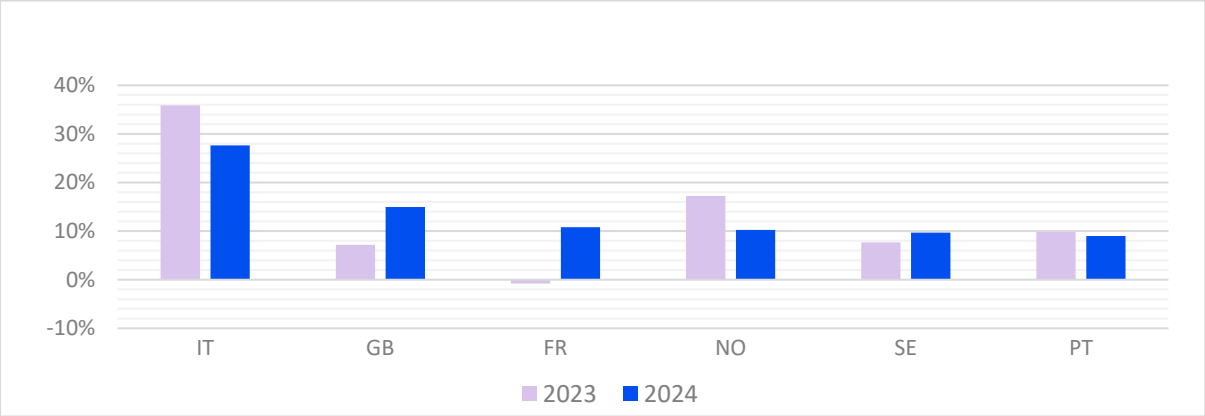
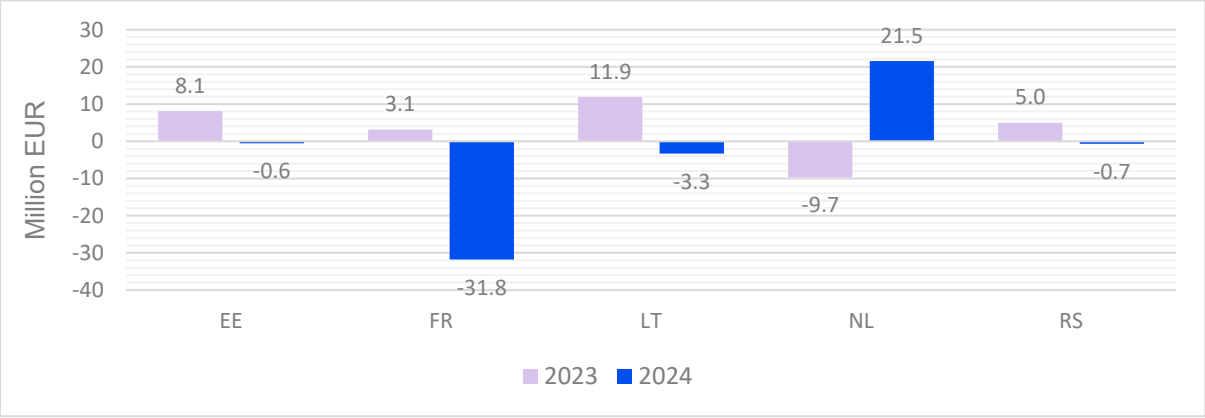


Figure 4: Share of net contribution per ITC party within total net contribution in 2023 and 2024



Note: the share of net contribution for France in 2023 is -0.8% (meaning that in 2023 France was compensated).

Figure 5: Net position per ITC party in 2023 and 2024 (million EUR)



Note: negative values indicate net contributors while positive values correspond to net recipients of the ITC fund. The selected countries are the only ones that changed their "position" from 2023 to 2024.

4.1. Contributions to the ITC fund

4.1.1. Perimeter countries' fee

45 Point 7 of Annex Part A of the Regulation sets out that an ITC Party shall levy a transmission system use fee on all scheduled imports and exports between its national transmission system and that of a perimeter country. The collection of the perimeter countries' contributions is governed by a series of bilateral contracts, which are renewed annually in most cases. ENTSO-E is required to calculate this perimeter countries' fee each year in advance based on projected flows for the relevant year.

46 The perimeter countries' fee (or 'perimeter fee') is based on the equivalent losses and infrastructure compensation for historical flows of the previous year. The perimeter fee has two elements: a losses-related and an infrastructure-related component. While the losses-related fee is calculated by dividing the 'with-and-without transit' fund size by the sum of net and scheduled imports and exports, the infrastructure-related fee is calculated by dividing the total 'Framework Fund' contribution, which is set at 100 million EUR, by the sum of net and scheduled import and export flows. The two components, summed and rounded to a single decimal place, create the perimeter fee. This value is produced at the end of each year for the next year based on losses costs and vertical load data collected from ITC Parties. For timing reasons, it is calculated on the basis of unaudited data but is updated after the data audit.

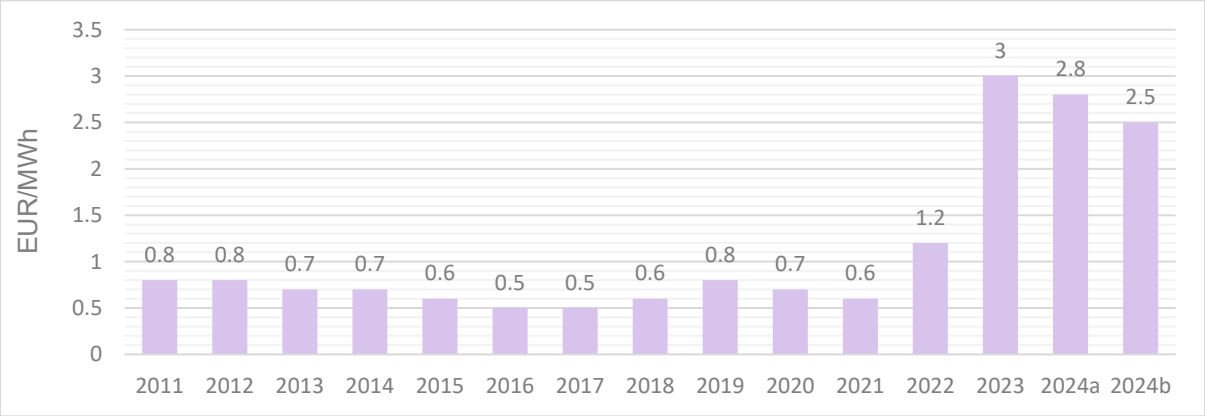
47 For 2024, ENTSO-E reported no major change in the methodology for calculating the perimeter fee'. Nonetheless, the participation of Ukrenergo to the ITC mechanism resulted in changes in the status of edge countries and perimeter countries during the year (from June to July 2024), thus the ITC fund was calculated based on two different perimeter countries' fee.

48 The perimeter countries' fee for the first semester of 2024 (from January to June) was 2.8 EUR/MWh, while the fee for the second semester of 2024 (from July to December) was 2.5 EUR/MWh. Both values decreased compared to the value of 2023 (3.0 EUR/MWh) and align with the observed reduction of the average value of losses recorded for the same years.

49 The evolution of the perimeter fee between 2011 and 2024 is presented in Figure 6, along with the perimeter countries' contributions to the fund, which latter is evaluated in more detail in the next section. ACER notes that the evolution of the perimeter countries' fee was stable between 2011 and 2021, with a value around 1 EUR/MWh. From 2022 onwards it significantly increased along with the increase 'with-and-without transit' fund during the relevant period, reaching its ever-highest figure in 2023, which was about 20% higher than the fee applied in the second semester of 2024. As explained by ENTSO-E, perimeter fee is expected to further decrease in future years, assuming losses costs continue their downward trend[29].

[29] https://www.entsoe.eu/news/2025/03/25/market-committee-approves-itc-audit-results-and-2025-perimeter-fee/.

Figure 6: Perimeter countries' fees between 2011 and 2024



Note: in 2024 two perimeter Countries' fee were used (2.8 EUR/MWh for the first semester and 2.5 EUR/MWh for the second semester). The year 2024a refers to the first semester of 2024 (January to June), while 2024b refers to the second semester (July to December).

4.1.2. ITC Parties' and perimeter countries' contributions

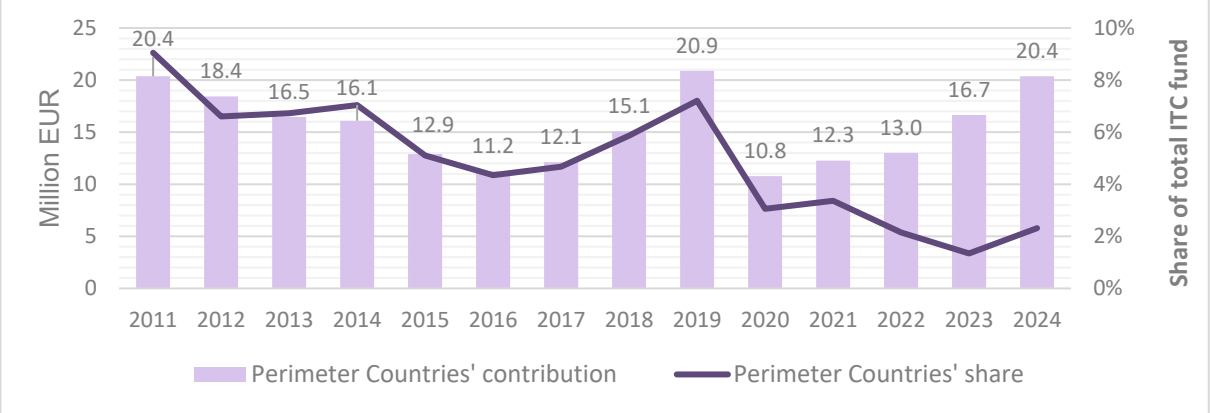
50 Point 6 of Annex Part A of the Regulation sets out that each ITC Party shall contribute to the ITC Fund based on its share of the total absolute amount of net imports and net exports of all ITC Parties.

51 Table 3 in the Annex provides a summary of the annual net import, net export and the contribution amount that each ITC Party paid into the ITC Fund in 2024, including the contributions made on behalf of the perimeter countries with whom it has a direct connection.

52 As shown in Figure 7, in 2024, perimeter countries paid 20.3 million EUR to the ITC fund, representing 2.3% of the ITC fund and the highest absolute amount of contribution to it after 2019. Lower amounts of contributions were raised from perimeter countries in 2020, 2021, 2022, and 2023 when the ITC parties contributed with 10.8 million EUR (3.1%), 12.3 million EUR (3.4%) 13 million EUR (2.1%) and 16.65 million EUR (1.3 %) respectively.

53 Despite a decrease in the value of the perimeter fee from 2023 to 2024 the absolute contribution to the ITC from perimeter countries increased by more than 20%. This is mostly due to a significant increase in scheduled export/import flow energy volumes between ITC Parties and perimeter countries in 2024 which were almost 50% higher than in the previous year, resulting in increased revenues.

Figure 7: Absolute and relative contributions to the ITC fund from perimeter countries



54 Based on the review of the ITC Agreement and the final dataset submitted by ENTSO-E, ACER confirms that the ITC fund contribution amounts were derived according to the requirements of points 6 and 7 of Annex Part A of the Regulation.

4.2. Compensations from the ITC fund

55 The ITC Parties shall receive compensation for losses incurred due to hosting cross-border flows and for making their infrastructure available to host these flows. The key inputs for the determination of the compensation amounts are the transits. More information on the transit consideration is provided in section 4.2.1, and on the compensations in sections 4.2.2 and 4.2.3 of this report.

4.2.1. Transit and its reduction

56 Point 1.6 of Annex Part A of the Regulation requires that transit of electricity is calculated by taking the lower of the absolute amount of imports and the absolute amount of exports between national transmission systems. In addition, for the purpose of calculating transits, the amount of imports and exports at each interconnection between the ITC Parties must be reduced in proportion to the share of capacity allocated in a manner which is not compatible with the congestion management methods required according to the Electricity Regulation. Ultimately, these reductions lead to decreased financial net positions of the concerned ITC Parties. The steps related to transit reductions are explained in detail in ENTSO-E's ITC Transit losses data report 2024[30].

57 Table 4 in the Annex provides a summary of the transits through each ITC Party's network before and after such reductions. The following borders were affected by the reduced transits in 2024 due to existence of long-term priority contracts:

- the French-Swiss border (in both directions);
- the Swiss-Italian border (in the direction towards Italy).

58 Based on the information provided by ENTSO-E,

- for the French-Swiss border, in direction towards Switzerland, capacity not allocated in a manner compatible with congestion management guidelines was 2015 MW in winter and 1857 MW in summer. In the direction towards France, capacity not allocated in a manner compliant with congestion management guidelines was 1100 MW in winter and 471 MW in summer;
- for the Swiss-Italian border in the direction towards Italy the capacity allocated in a manner not compatible with the congestion management guidelines was 125 MW in both winter and summer.

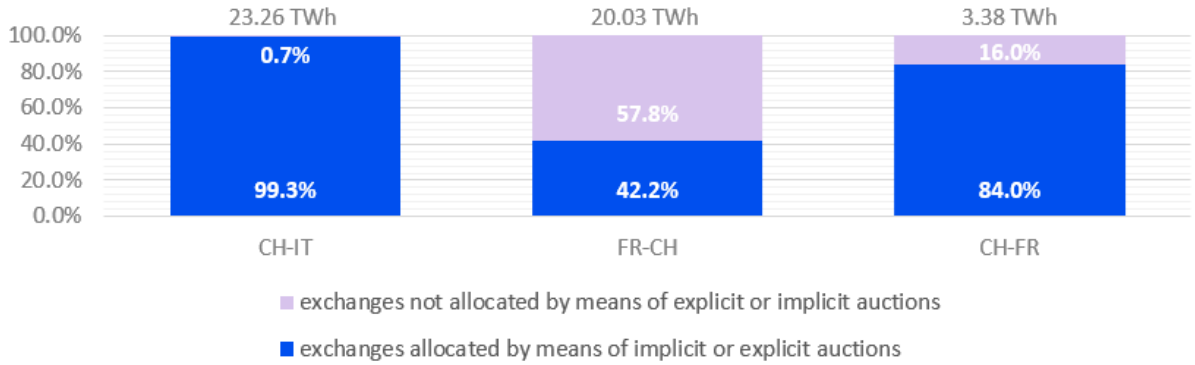
59 For the Austrian-Swiss border, which was still impacted by reduced transits in 2023 (i.e. 12 MW both in winter and summer), in 2024 all capacity was allocated in a manner compatible with the congestion management guidelines.

60 Shares of scheduled exchanges in 2024 that were allocated in a manner compatible or not compatible with the congestion management guidelines are presented in Figure 8. ACER notes that on the concerned borders the relative share of exchanges not allocated by means of implicit and explicit auctions slightly increased compared to 2023 for the direction from Switzerland to Italy and France to Switzerland, while for the direction from Switzerland to France the capacity

[30] ENTSO-E ITC Transit Losses Data report 2024 (September 2025).

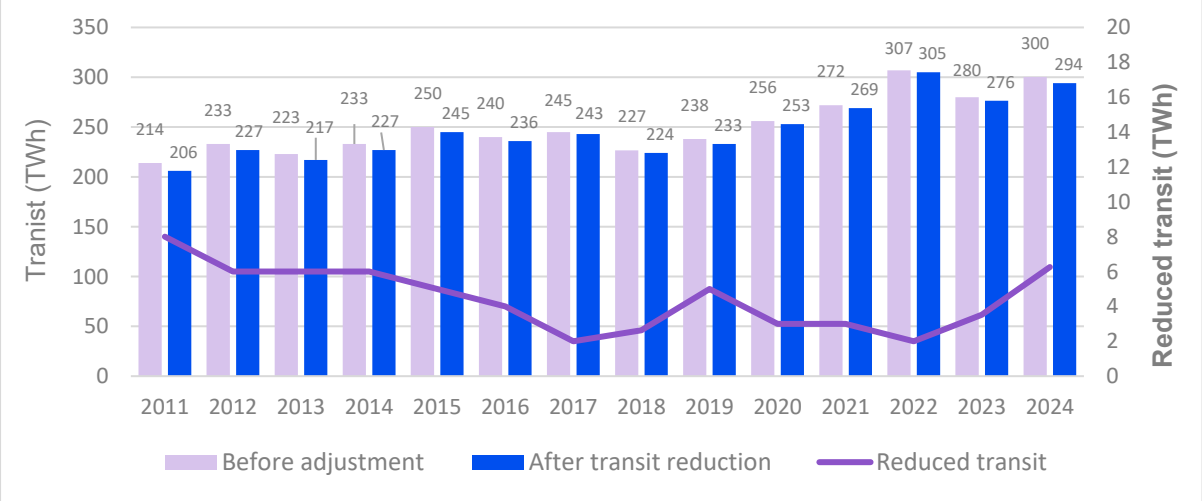
not allocated by means of implicit or explicit auctions decreased[31]. In absolute amounts, on the other hand, such exchanges decreased considerably compared to last year.[32]

Figure 8: Shares of scheduled exchanges according to the manner of their allocation for the three borders affected by reduced transits in 2024



61 Figure 9 provides a comparison of transits before and after reduction in the period between 2011 and 2024. ACER notes that in 2024, the amount of transits before reduction reached 300 TWh whilst the amount of transits after reduction reached 294 TWh, thereby constituting an increase in transit volumes from the 2023 level[33] to a level similar to the one in 2022. The amount of TWh of reduced transit volumes (6 TWh) is the highest value since 2014. A higher value has only been recorded in 2011, when the total volume of reduced transits was 8 TWh.

Figure 9: Amounts of transits before and after reduction between 2011 and 2024 (values are rounded)



4.2.2. Compensation for transmission losses

62 The key steps for calculating the amount of compensation received by each ITC Party for the transmission losses incurred by carrying cross-border flows of electricity are defined under Point 4 of Annex Part A of the Regulation. They are summarised below:

[31] CH-IT (from 0.6% to 0.7%), FR-CH (from 54.4% to 57.8%), CH-FR (from 24.9% to 16.0%).
[32] The total amount of exchanges not allocated by means of implicit or explicit auctions decreased from 29.8 TWh in 2023 to 12.3 TWh in 2024.
[33] In 2023, ACER noted that the amount of transits before reduction reached 280 TWh and after reduction reached 276 TWh.

- The physical amount of the relevant losses must be calculated by ENTSO-E based on the difference between actual losses with transits and estimated losses without transits on the ITC Party's network;
- The value of losses incurred by a national system as a result of transits shall be calculated on the same basis as those approved by the respective NRA in respect of all losses on the national transmission system. Where the relevant NRA has not approved the basis for the calculation of losses, ENTSO-E is required to estimate the value of losses for the purpose of the ITC mechanism.

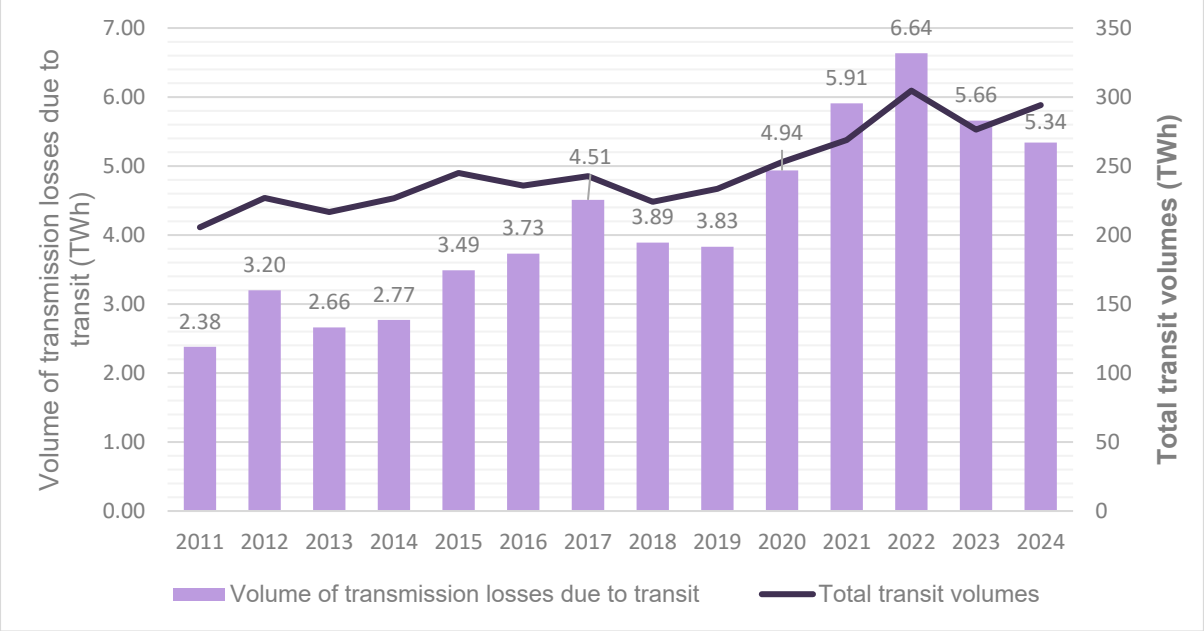
4.2.2.1. Volume of losses

63 ENTSO-E sets out the detailed method for the calculation of the volume of losses in the ITC Agreement.

64 The Regulation requires ENTSO-E to publish the calculation of the volume of losses and its method. ACER notes that in September 2025, ENTSO-E published the calculation method and the results for 2024[34].

65 For each ITC party, Table 5 in the Annex provides a summary of the volume of annual losses due to transits, the respective values of losses and the compensation received from the ITC Fund in 2023 and 2024. The evolution of the overall volume of transmission losses due to transits is presented in Figure 10. The figure shows strong correlation between volume of transmission losses due to transits and total transit volumes, confirming a clear link between loss magnitude and total energy flows.

Figure 10: Volume of transmission losses due to transits and total transit volumes between 2011 and 2024



66 ACER notes that the volume of transmission losses due to transits further decreased by 5.7% to 5.34 TWh after a significant decrease of 14.8%, in 2023[35]. However, compared to its amount in 2019, the volume of transmission losses is still 39% higher compared to 2024.

[34] ENTSO-E ITC Transit Losses Data Report 2023.
[35] From 6.64 TWh in 2022 down to 5.66 TWh in 2023.

67 This 5.7% decrease of losses due to transits compared to the previous year happened in parallel to a 27.6% decrease in the volume-weighted average value of losses, explaining the sharp 31.7% decrease of the losses component of the ITC fund in 2024[36].

4.2.2.2. Value of losses[37]

68 Pursuant to point 4 of Annex Part A of the Regulation, the value of losses incurred by a national transmission system as a result of the cross-border flows of electricity shall be calculated on the same basis as the one approved by the NRA in respect of all losses on the national transmission system.

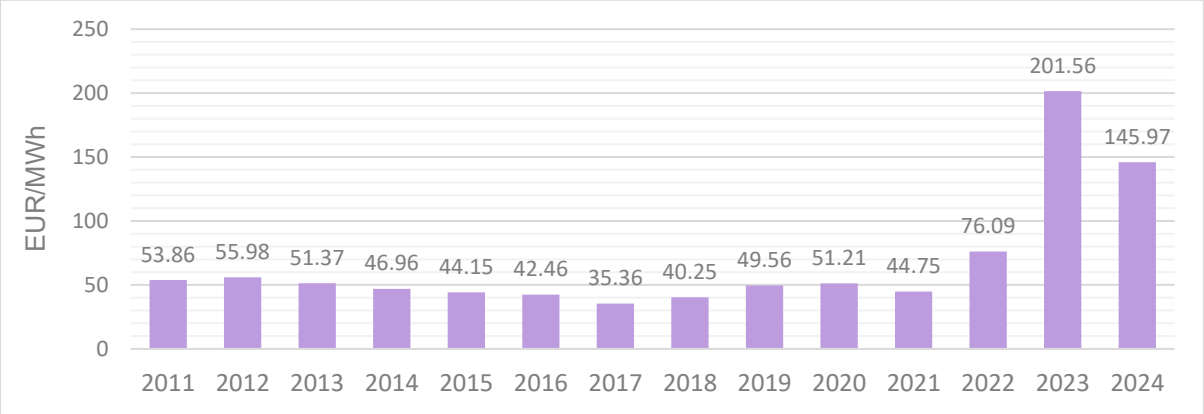
69 ACER's review of the criteria for the valuation of losses at national level is based on the information received from NRAs of the EU ITC Parties as well as of Norway and is provided in section 3 of ACER's Recommendation No 01/2023 on the Treatment of Losses for the Purpose of the ITC Mechanism[38]. Updated country-specific information on the valuation of losses is provided in Table 9 in Annex 1 to this Report. No major updates were reported for the assessed jurisdictions.

70 ACER's review of the value of losses used for the implementation of the ITC mechanism between 2019 and 2024 is provided below. This review covers both the values from 2019-2024 detailed by country in Table 7 in the Annex and the actual loss values in 2024 detailed by country in Table 9 in the Annex.

71 Figure 11 presents average values of losses, weighted by their volume, for all ITC Parties between 2011 and 2024. ACER notes that in line with its previous expectations, due to the unprecedented heights of the electricity wholesale prices in 2021 and significant volatility within that year, the value of losses indeed significantly increased for the follow-up years 2022 and 2023. In 2023, the volume-weighted average value of losses of all ITC parties increased by 165% compared to the year before and reached its highest ever value of 201.56 EUR/MWh[39] before it dropped by more than 27% to 145.97 EUR/MWh in 2024.

72 Despite the sharp decrease of the volume-weighted average of losses in 2024, it is still double the value for 2022 (i.e. 76.09 EUR/MWh) and more than three times the value of 2021 (i.e. 44.75 EUR/MWh), which is partially caused by some national criteria using historical market prices looking multiple years back for setting values of losses for the purpose of the ITC mechanism.

Figure 11: Volume-weighted average value of losses for all ITC Parties between 2011 and 2024



[36] From 1140.6 million EUR in 2023 to 779.9 million EUR in 2024

[37] The values reported in this section are the losses' values used for the implementation of the ITC mechanism, which are typically calculated or estimated ex-ante (i.e. at the end of the previous year based on forecasted market prices) and they may not be the same as the 'actual' losses' values, which are typically registered ex-post (i.e. using the actual costs/market prices).

[38] ACER Recommendation 01/2023 on the treatment of losses or the purpose of the ITC mechanism.

[39] ACER also notes that the straight average value is even higher, amounting to up to 222.15 EUR/MWh in 2023 compared to 87.31 EUR/MWh in 2022.

73 Figure 12 and Figure 13 provide an overview of the values of losses used for the ITC mechanism in the period between 2017 and 2024 differentiated between EU and non-EU ITC Parties. ACER notes that in 2024, the weighted average value of losses decreased for both the EU ITC Parties and the non-EU ITC Parties compared to 2023 (by 25.6% and by 42.5% respectively) resulting in a slightly lower value for the non-EU ITC Parties (i.e. 137.62 EUR/MWh) compared to the EU ITC Parties (i.e. 147.56 EUR/MWh). These results inverted the trend since 2011 with average values higher for EU countries compared to non-EU countries.

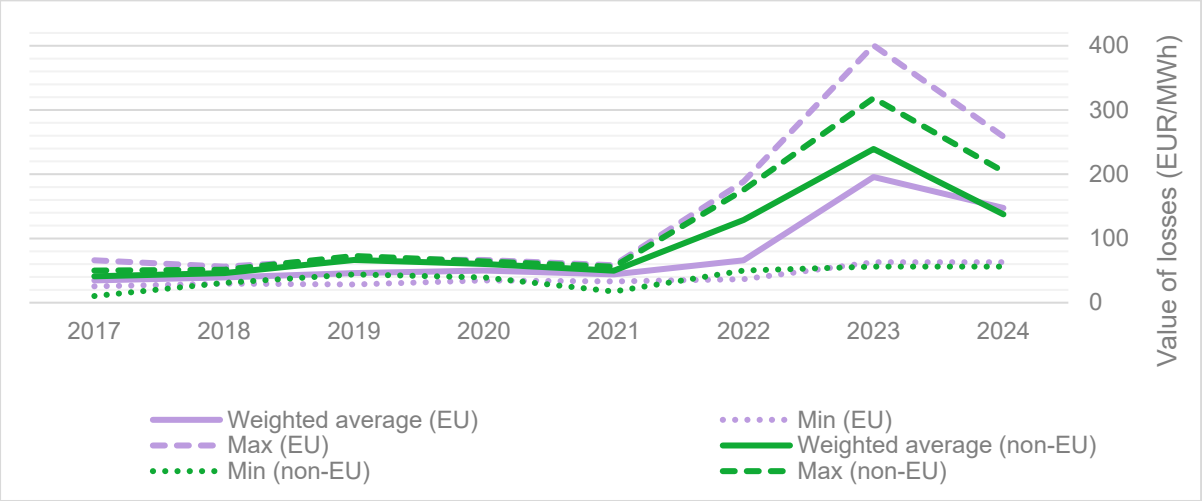
74 ACER notes that the difference between the minimum and the maximum values of the losses in 2024 significantly decreased both among the EU ITC Parties and among the non-EU ITC Parties, when compared to values of 2023. While this shows a significantly lower volatility of the value of losses across the countries in 2024 the difference between the highest losses value (i.e. 258.75 EUR/MWh in the Netherlands[40]) and the lowest value (i.e. 56.21 EUR/MWh for Bosnia and Herzegovina) is still four-fold.

Figure 12: Comparison of losses values in the EU and the non-EU ITC Parties between 2017 and 2024[41]

	Average value weighted by the volume of losses (EUR/MWh)	Average value weighted by the volume of losses (EUR/MWh)	Maximum value (EUR/MWh)	Maximum value (EUR/MWh)	Minimum value (EUR/MWh)	Minimum value (EUR/MWh)
	EU ITC Parties	non-EU ITC Parties	EU ITC Parties	non-EU ITC Parties	EU ITC Parties	non-EU ITC Parties
2017	34.67	41.08	66.08 (GB)	50 (MK)	25.48 (LU)	10.35 (AL)
2018	39.28	45.95	56.13 (IT)	51.32 (BA)	29.62 (SE)	30.76 (NO)
2019	46.11	66.55	68.08 (GB)	72.72 (CH)	28.45 (SE)	44.00 (KS)
2020	49.93	60.39	66.6 (GR)	64.22 (BA)	34.62 (FI)	39.22 (NO)
2021	44.06	49.84	58.4 (BG)	55.93 (BA)	33.21 (SE)	17.43 (NO)
2022	66.13	128.72	188.5 (GR)	175.75 (MK)	36.48 (FI)	50 (AL)
2023	195.70	239.31	400.68 (SK)	318.49 (GB)	63.00 (FI)	56.21 (BA)
2024	147.56	137.62	258.75 (NL)	204.36 (CH)	63.00 (FI)	56.21 (BA)

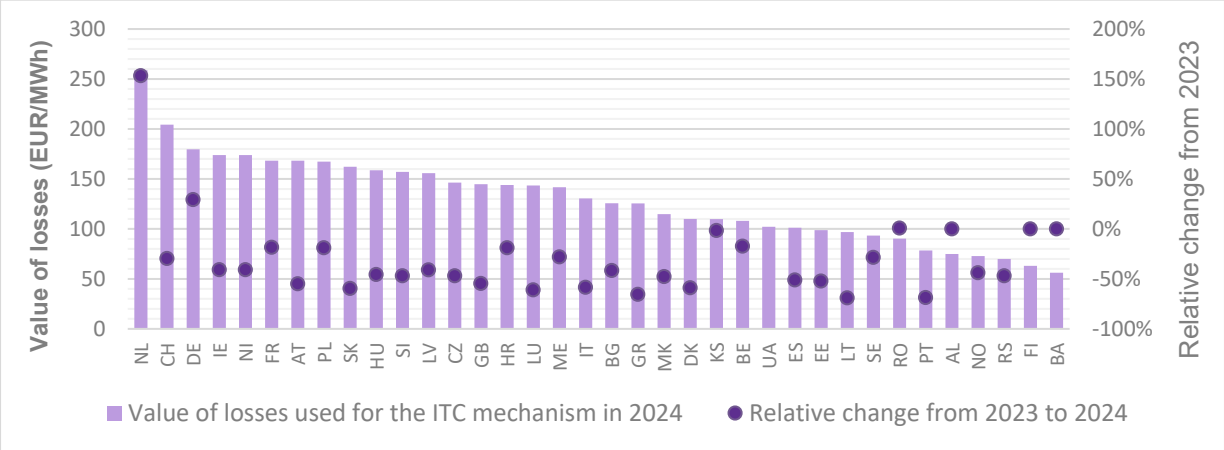
[40] This increase is mostly related to the losses' valuation methodology applied for the Dutch ITC Party. The estimate in year t is based on an ex-ante budget for the year t and on the ex-post settlement for t-2. More information on the procurement of losses and their determination can be found in Table 9 in Annex.
[41] Since 2020, Great Britain and Northern Ireland are reported within the non-EU ITC Parties, while for the previous years, they are reported within the EU ITC Parties.

Figure 13: Evolution of the value of losses (average weighted by the volume of losses, minimum and maximum values) between 2017 and 2024



75 Values of losses of individual ITC Parties in each year are shown in Table 7 in the Annex, while Figure 14 shows the value of losses in each ITC Party in 2024 and the relative change compared to 2023. ACER notes that out of 35[42], 29 ITC Parties reported lower values, 3 countries (AL, BA, FI) reported the same value, and 3 countries (DE, NL, RO) reported higher values in 2024 compared to 2023.

Figure 14: value of losses in each ITC Party in 2024 and the relative change compared to 2023



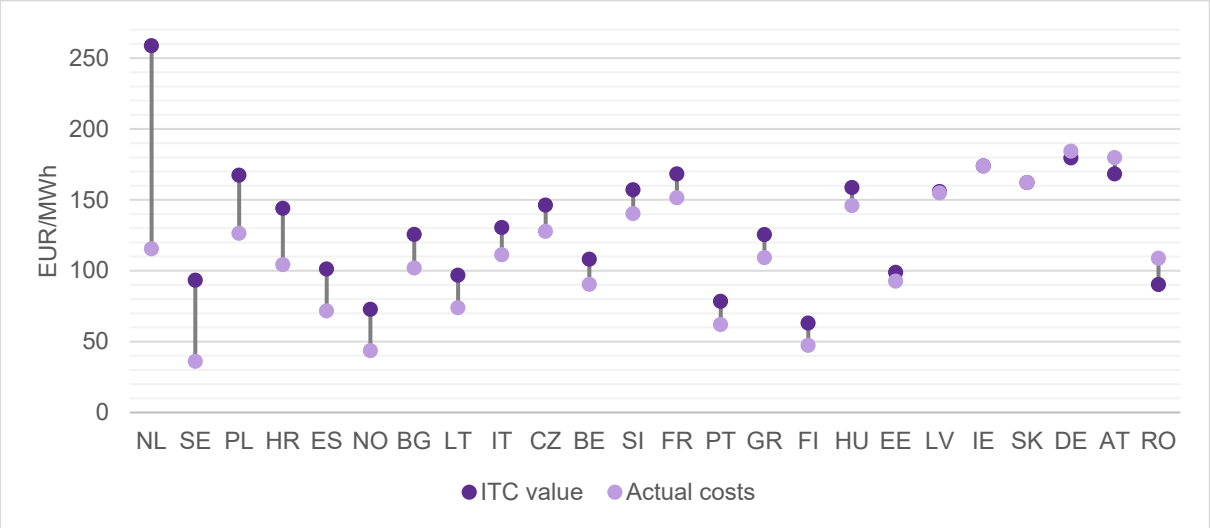
76 ACER performed a comparison between the losses' values used for the purpose of the ITC mechanism in 2024, and the 'actual' value of losses in 2024, which is typically registered ex-post (i.e. using the actual costs/market prices) for the EU ITC Parties. As shown in Figure 15 below and in Table 8 in the Annex, for 18 out of the 24 assessed ITC Parties (for which the data were available), the value of losses used for the ITC mechanism 2024 was higher than the actual value (costs), in two countries (IE, SK) the value was the same, while in the remaining three countries (RO, AT, DE) the values used for ITC were lower compared to the actual values. In seven countries (SE, NL, NO, ES, HR, FI, PL) the relative difference between the ITC values and the actual values was bigger than 30%. The biggest relative difference was observed for Sweden (158.6% lower), the Netherlands (124.2% lower) and Norway (66.9% lower).

77 ACER notes that had the actual value of losses been used for the ITC mechanism (where such data was available), rather than the calculated/estimated ones, this would have led to

[42] No variation for Ukraine since effectively joined the ITC agreement in 2024.

approximately 13% decrease of the overall ITC compensation for losses in 2024 (i.e. 678.2 million EUR instead of 779.9 million EUR).[43]

Figure 15: Comparison of the values of losses used for the ITC mechanism and the actual losses costs in 2024



Note: For Denmark and Luxembourg no data on actual losses costs was provided for 2024.

4.2.3. Compensation for infrastructure availability for cross-border flows

78 The key parameters for calculating the amount of compensation an ITC Party should receive for provision of infrastructure to carry cross-border flows are defined in Point 5 of Annex Part A of the Regulation. They are summarised below:

- The annual cross-border infrastructure sum is set at 100 million EUR until determined otherwise by the European Commission.
- Transit factor and load factor are used to apportion the above sum to each ITC Party. The transit factor refers to the amount of transits carried by an ITC Party as a proportion of all transits carried by all ITC Parties. The load factor refers to the relative amount of transits measured by the square of transits divided by the level of the load plus transits in proportion to the relative amount of all ITC Parties' transits. In apportioning the infrastructure compensation amount for an ITC Party, the Transit Factor has a weighting of 75% and the Load Factor a weighting of 25%.

79 Based on the review of the ITC Agreement and the final dataset submitted by ENTSO-E, ACER is able to confirm that the compensation amounts relating to the provision of cross-border infrastructures were derived according to the above requirements.

80 Table 7 in the Annex provides a summary of the annual amount each ITC Party received in 2024 based on their transit factors and load factors.

[43] Actual costs of procurement of energy to cover transmission losses were available for 24 Member States and Norway.

5. Overall conclusions and broader considerations

81 ACER finds that the Inter-Transmission System Operator Compensation ('ITC') mechanism in 2024 is still in line with the legal requirements set out in Regulation (EU) 2019/943 and Commission Regulation (EU) 838/2010.

82 However, ACER still sees the need to introduce methodological improvements in line with previous recommendations made by ACER in its Recommendation No 01/2023 to ENTSO-E, TSOs and NRAs[44].

83 ACER acknowledges ENTSO-E's efforts in evaluating ACER's recommendations regarding the increase of the number of snapshots used for the estimation of the volume of losses due to transits as well as the ex-post determination of the values of losses[45] proposal. However, ACER regrets that the ITC implementation in 2024 did not incorporate any of the proposed improvements.

84 As underlined in previous ACER report[46], the ITC mechanism falls short in equitably sharing infrastructure cost and benefits arising from cross-border trade, which may affect the development of the necessary infrastructure investments. ACER is currently carrying out a holistic review of the existing mechanisms to share costs and benefits of electricity network infrastructure arising from cross-border trade. One key objective is to better reflect the wider EU benefits of infrastructure, including internal and cross-border flows to facilitate or promote infrastructure investments beyond the national interest and needs.

[44] The recommendations call for: Increase of the number of snapshots used for the estimation of the volume of losses due to transits; ex-post reconciliation of the costs of losses due to transits should be applied in the ITC mechanism, to reflect the costs actually incurred; and Consideration of liquid forward-market prices instead of historical prices for determination of the relevant components of the value of losses for the ITC mechanism, where relevant.
[45] ACER Recommendation 01/2023 on the treatment of losses or the purpose of the ITC mechanism.
[46] ACER and CEER, 2024, Challenges of the future electricity system – Recommendations and commitments.

Annex 1: ITC Party specific information

Please note that while the actual ITC settlement is in Euro cents, the tables below present all monetary values in millions of Euros rounded to three decimal places. Also note that values for Ukraine only refers to the second semester of 2024 (July to December).

Table 1: Overview of compensations and contributions to the ITC fund in 2024

ITC Party	Compensation (million EUR)		Contribution on behalf of perimeter countries (million EUR)		Contribution from ITC Party (million EUR)		Final net position (million EUR)
	Losses	Infrastructure	Losses	Infrastructure	Losses	Infrastructure	
Albania	1.972	0.554	0.000	0.000	2.574	0.300	-0.349
Austria	36.717	6.597	0.000	0.000	17.135	1.999	24.180
Belgium	19.748	5.254	0.000	0.000	21.513	2.510	0.979
Bosnia	2.635	1.685	0.000	0.000	4.232	0.494	-0.406
Bulgaria	4.174	1.074	1.678	1.678	7.284	0.850	-6.241
Croatia	10.359	2.911	0.000	0.000	8.506	0.992	3.772
Czech Republic	44.850	5.074	0.000	0.000	13.897	1.621	34.406
Denmark	43.231	7.777	0.000	0.000	16.217	1.892	32.899
Estonia	3.026	0.923	0.000	0.000	4.046	0.472	-0.569
Finland	10.094	1.057	0.000	0.000	14.708	1.717	-5.273
France	117.796	3.674	0.000	0.000	137.250	16.015	-31.795
Germany	112.285	12.785	0.000	0.000	80.450	9.387	35.234
Great Britain	16.688	2.477	0.000	0.000	57.047	6.658	-44.540
Greece	4.957	0.710	0.734	0.734	9.301	1.085	-6.188
Hungary	20.437	3.706	1.078	1.078	19.578	2.284	0.124
Ireland	0.150	0.021	0.000	0.000	8.227	0.960	-9.016
Italy	8.574	0.832	0.000	0.000	82.030	9.573	-82.197
Kosovo	2.210	0.700	0.000	0.000	2.808	0.328	-0.226
Latvia	5.438	0.765	0.000	0.000	4.147	0.484	1.572
Lithuania	3.766	1.579	0.000	0.000	7.734	0.902	-3.291
Luxembourg	0.188	0.045	0.000	0.000	5.612	0.655	-6.033
Montenegro	4.728	2.759	0.000	0.000	1.928	0.225	5.334
Netherlands	44.134	4.542	0.000	0.000	24.295	2.835	21.546
North Macedonia	1.884	1.025	0.000	0.000	2.132	0.249	0.529
Northern Ireland	4.510	0.685	0.000	0.000	2.115	0.247	2.833
Norway	12.548	3.005	0.000	0.000	41.268	4.815	-30.529
Poland	77.070	2.650	0.433	0.433	14.488	1.690	62.676
Portugal	0.246	0.344	0.000	0.000	24.456	2.853	-26.720
Romania	0.751	1.354	1.398	1.398	9.071	1.058	-10.821
Serbia	4.046	1.510	0.000	0.000	5.591	0.652	-0.687
Slovakia	29.311	5.742	0.688	0.688	5.604	0.654	27.420
Slovenia	15.396	4.017	0.000	0.000	5.170	0.603	13.639
Spain	29.187	3.014	4.033	4.033	22.746	2.655	-1.265
Sweden	27.435	2.422	0.000	0.000	52.503	6.126	-28.772
Switzerland	59.038	5.742	0.000	0.000	31.260	3.647	30.046
Ukraine	0.350	0.818	0.140	0.140	2.829	0.330	-2.271
TOTAL	**779.929**	**100.000**	**10.183**	**10.183**	**769.747**	**89.817**	**0.000**

Table 2: Final net positions of ITC Parties between 2019 and 2024

	Final net position (million EUR)						
ITC party	2019	2020	2021	2022	2023	2024	Compared to direction in 2023?[47]
Albania	-1.271	-1.534	-2.273	-2.002	-4.294	-0.349	Same
Austria	16.176	12.584	4.531	13.873	50.905	24.180	Same
Belgium	3.030	3.507	2.856	1.254	0.986	0.979	Same
Bosnia	-0.148	-0.696	-1.177	-2.062	-8.667	-0.406	Same
Bulgaria	-1.500	-1.062	-5.843	-14.639	-7.181	-6.241	Same
Croatia	-0.294	-0.767	2.226	1.744	8.572	3.772	Same
Czech Rep.	12.291	20.456	7.975	6.676	32.198	34.406	Same
Denmark	9.207	9.878	14.204	26.809	86.963	32.899	Same
Estonia	4.759	3.764	7.435	19.821	8.086	-0.569	Different
Finland	-4.953	2.981	4.693	-0.860	-0.438	-5.273	Same
France	-21.004	-19.808	-15.255	12.505	3.136	-31.795	Different
Germany	-9.168	6.791	29.786	11.627	13.724	35.234	Same
Great Britain	-8.875	-12.489	-10.209	21.602	-27.346	-44.540	Same
Greece	-4.676	-6.323	-0.948	-1.903	-6.413	-6.188	Same
Hungary	-2.753	-3.366	-4.212	-6.502	0.630	0.124	Same
Ireland	-1.818	-1.681	-2.518	-3.139	-10.748	-9.016	Same
Italy	-22.122	-27.355	-36.336	-65.052	-136.154	-82.197	Same
Kosovo	0.499	-0.028	0.169	-0.444	-1.978	-0.226	Same
Latvia	2.383	0.100	-1.228	0.345	0.724	1.572	Same
Lithuania	-2.642	-0.124	-0.169	-3.543	11.937	-3.291	Different
Luxembourg	-2.769	-3.398	-3.418	-5.738	-9.705	-6.033	Same
Montenegro	2.128	4.270	2.484	3.659	4.289	5.334	Same
Netherlands	7.959	10.576	9.237	-1.084	-9.718	21.546	Different
North Macedonia	0.571	-0.192	-0.652	0.862	0.735	0.529	Same
Northern Ireland	-0.587	-0.718	-0.109	-1.418	1.051	2.833	Same
Norway	-10.378	-20.503	-18.586	-39.328	-65.437	-30.529	Same
Poland	5.072	8.226	14.258	30.749	43.354	62.676	Same
Portugal	-6.321	-9.330	-9.354	-17.983	-37.352	-26.720	Same
Romania	-4.345	-2.331	-3.812	-5.899	-13.616	-10.821	Same
Serbia	1.100	1.645	2.158	1.611	4.960	-0.687	Different
Slovakia	8.035	11.643	9.545	11.550	32.199	27.420	Same
Slovenia	5.597	2.164	4.255	8.414	25.249	13.639	Same
Spain	8.820	4.058	-3.847	-16.423	-11.606	-1.265	Same
Sweden	-7.205	-7.960	-5.565	-26.633	-29.141	-28.772	Same
Switzerland	25.201	17.022	9.699	41.550	50.092	30.046	Same
Ukraine	-	-	-	-	-	-2.271	-
TOTAL	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	-

Note: for final net positions from 2011 to 2019 please refer to ACER Report on the implementation of the ITC mechanism in 2023 (2025).

[47] Was the status of the ITC Party (i.e. net contributor or compensated country) in 2024 the same as the one in 2023?

Table 3: Derivation of contributions to the ITC Fund in 2024

ITC Party	Net Import (MWh)	Net Export (MWh)	Contribution to infrastructure (million EUR)		Contribution to losses (million EUR)	
			Perimeter countries	ITC Party	Perimeter countries	ITC Party
Albania	994,953	661,061	0.000	0.300	0.000	2.574
Austria	3,000,949	8,022,987	0.000	1.999	0.000	17.135
Belgium	12,314,173	1,526,116	0.000	2.510	0.000	21.513
Bosnia	133,221	2,589,292	0.000	0.494	0.000	4.232
Bulgaria	1,741,880	2,944,100	1.678	0.850	1.678	7.284
Croatia	5,265,373	206,669	0.000	0.992	0.000	8.506
Czech Republic	1,244,841	7,695,552	0.000	1.621	0.000	13.897
Denmark	7,226,976	3,206,623	0.000	1.892	0.000	16.217
Estonia	2,571,032	31,868	0.000	0.472	0.000	4.046
Finland	6,393,990	3,069,138	0.000	1.717	0.000	14.708
France	371,502	87,930,356	0.000	16.015	0.000	137.250
Germany	38,445,229	13,312,947	0.000	9.387	0.000	80.450
Great Britain	35,387,423	1,315,294	0.000	6.658	0.000	57.047
Greece	2,670,491	3,313,427	0.734	1.085	0.734	9.301
Hungary	11,530,286	1,065,520	1.078	2.284	1.078	19.578
Ireland	5,171,074	121,683	0.000	0.960	0.000	8.227
Italy	52,681,526	94,580	0.000	9.573	0.000	82.030
Kosovo	1,172,065	634,359	0.000	0.328	0.000	2.808
Latvia	1,800,647	867,147	0.000	0.484	0.000	4.147
Lithuania	4,962,369	13,272	0.000	0.902	0.000	7.734
Luxembourg	3,610,284	0	0.000	0.655	0.000	5.612
Montenegro	542,614	697,903	0.000	0.225	0.000	1.928
Netherlands	5,704,346	9,926,418	0.000	2.835	0.000	24.295
North Macedonia	1,048,431	323,215	0.000	0.249	0.000	2.132
Northern Ireland	732,438	628,418	0.000	0.247	0.000	2.115
Norway	4,490,311	22,059,919	0.000	4.815	0.000	41.268
Poland	5,555,087	3,765,482	0.433	1.690	0.433	14.488
Portugal	13,099,509	2,634,544	0.000	2.853	0.000	24.456
Romania	4,612,976	1,222,599	1.398	1.058	1.398	9.071
Serbia	2,075,888	1,520,877	0.000	0.652	0.000	5.591
Slovakia	693,683	2,911,571	0.688	0.654	0.688	5.604
Slovenia	460,285	2,866,226	0.000	0.603	0.000	5.170
Spain	3,268,785	11,365,487	4.033	2.655	4.033	22.746
Sweden	110,889	33,667,305	0.000	6.126	0.000	52.503
Switzerland	3,098,724	17,011,859	0.000	3.647	0.000	31.260
Ukraine	1,727,456	92,438	0.140	0.330	0.140	2.829
TOTAL	**245,911,705**	**249,316,252**	**10.183**	**89.817**	**10.183**	**769.747**
			100.000		**779.929**	

Table 4: Reduction in transits in 2024

ITC party	Transit before adjustment (MWh)	Reduction due to non-auctioned interconnection capacity (MWh)	Transit after reduction (MWh)
Albania	1,673,817	0	1,673,817
Austria	17,004,712	0	17,004,712
Belgium	15,498,031	0	15,498,031
Bosnia	4,586,024	0	4,586,024
Bulgaria	3,602,575	0	3,602,575
Croatia	7,744,205	0	7,744,205
Czech Republic	14,085,005	0	14,085,005
Denmark	18,258,134	0	18,258,134
Estonia	2,602,824	0	2,602,824
Finland	3,832,363	0	3,832,363
France	14,040,821	562,714	13,478,108
Germany	41,010,451	0	41,010,451
Great Britain	9,172,014	0	9,172,014
Greece	2,571,048	0	2,571,048
Hungary	10,691,907	0	10,691,907
Ireland	83,507	0	83,507
Italy	3,222,575	0	3,222,575
Kosovo	1,987,845	0	1,987,845
Latvia	2,163,980	0	2,163,980
Lithuania	4,277,903	0	4,277,903
Luxembourg	166,194	0	166,194
Montenegro	5,410,220	0	5,410,220
Netherlands	14,324,203	0	14,324,203
North Macedonia	2,752,799	0	2,752,799
Northern Ireland	2,063,254	0	2,063,254
Norway	10,022,831	0	10,022,831
Poland	9,224,208	0	9,224,208
Portugal	1,256,917	0	1,256,917
Romania	4,556,752	0	4,556,752
Serbia	4,851,458	0	4,851,458
Slovakia	13,727,915	0	13,727,915
Slovenia	9,508,470	0	9,508,470
Spain	10,927,714	0	10,927,714
Sweden	8,255,218	0	8,255,218
Switzerland	22,163,362	5,694,081	16,469,281
Ukraine	3,100,803	0	3,100,803
TOTAL	**300,422,061**	**6,256,795**	**294,165,266**

Table 5: Derivation of compensation for transmission losses in 2023 and 2024

ITC party	2023			2024		
	Impact of transits on losses volume (MWh)	Value of losses (EUR/MWh)	Compensation (million EUR)	Impact of transits on losses volume (MWh)	Value of losses (EUR/MWh)	Compensation (million EUR)
Albania	13,901	74.98	1.04	26,296.11	74.98	1.972
Austria	200,660	373.78	75.00	218,269.06	168.22	36.717
Belgium	189,546	130.76	24.79	182,679.52	108.10	2.635
Bosnia	34,666	56.21	1.95	46,882.89	56.21	19.748
Bulgaria	28,672	215.29	6.17	33,228.66	125.62	4.174
Croatia	88,332	177.48	15.68	71,962.90	143.95	0.150
Czech Republic	211,708	275.37	58.30	306,643.13	146.26	44.850
Denmark	405,667	268.13	108.77	392,870.37	110.04	3.026
Estonia	73,320	207.18	15.19	30,630.48	98.80	10.094
Finland	290,311	63.00	18.29	160,223.60	63.00	112.285
France	767,117	206.47	158.39	700,169.39	168.24	16.688
Germany	1,030,842	138.98	143.27	625,193.88	179.60	43.231
Great Britain	168,103	318.49	53.54	115,301.62	144.73	4.957
Greece	33,869	364.50	12.35	39,494.33	125.50	20.437
Hungary	93,236	292.39	27.26	128,809.71	158.66	8.574
Ireland	1,055	294.11	0.31	860.01	173.90	2.210
Italy	34,426	314.00	10.81	65,741.90	130.42	5.438
Kosovo	14,577	111.66	1.63	20,128.62	109.78	3.766
Latvia	27,996	264.50	7.40	34,905.86	155.79	44.134
Lithuania	85,858	312.78	26.85	38,900.28	96.82	0.188
Luxembourg	620	368.87	0.23	1,312.27	143.53	4.728
Montenegro	25,843	196.85	5.09	33,348.26	141.77	1.884
Netherlands	240,154	102.19	24.54	170,566.79	258.75	77.070
North Macedonia	8,877	220.00	1.95	16,413.48	114.80	4.510
Northern Ireland	18,347	294.11	5.40	25,934.78	173.90	12.548
Norway	85,253	129.88	11.07	172,391.92	72.79	0.246
Poland	307,065	206.46	63.40	460,504.53	167.36	0.751
Portugal	10,199	250.60	2.56	3,131.69	78.43	4.046
Romania	5,936	89.59	0.53	8,319.19	90.25	29.311
Serbia	83,142	132.00	10.97	57,802.81	70.00	15.396
Slovakia	94,797	400.68	37.98	180,777.98	162.14	59.038
Slovenia	102,603	296.12	30.38	97,997.75	157.11	27.435
Spain	199,008	206.97	41.19	288,384.67	101.21	117.796
Sweden	375,918	130.52	49.06	294,204.87	93.25	29.187
Switzerland	307,551	290.35	89.30	288,892.045	204.36	10.359
Ukraine	-	-	-	3,430.83	102.16	0.350
TOTAL	**5,659,173**	**-**	**1,140.64**	**5,339,985.21**	**-**	**779.929**

Note: The values reported in this section are the losses' values used for the implementation of the ITC mechanism, which are typically calculated or estimated ex-ante (i.e. at the end of the previous year based on forecasted market prices) and they may not be the same as the 'actual' losses' values, which are typically registered ex-post (i.e. using the actual costs/market prices).

Table 6: Derivation of compensation for cross-border infrastructure in 2024

ITC Party	Transit (MWh)	Load[48] (GWh)	Transit Factor based compensation (million EUR)*	Load Factor based compensation (million EUR)*	Total Infrastructure compensation (million EUR)*
Albania	1,673,817	7,225	0.429	0.124	0.554
Austria	17,004,712	31,966	4.335	2.262	6.597
Bosnia	4,586,024	11,112	1.170	0.514	1.684
Belgium	15,498,031	55,931	3.958	1.296	5.254
Bulgaria	3,602,575	29,800	0.922	0.152	1.074
Switzerland	16,469,281	45,289	4.212	1.702	5.914
Czech Republic	14,085,005	37,153	3.591	1.483	5.074
Germany	41,010,451	235,028	10.452	2.333	12.785
Denmark	18,258,134	22,418	4.647	3.130	7.777
Estonia	2,602,824	7,236	0.657	0.265	0.923
Spain	10,927,714	186,003	2.783	0.232	3.014
Finland	3,832,363	61,991	0.971	0.086	1.057
France	13,478,108	370,963	3.475	0.198	3.674
Great Britain	9,172,014	230,959	2.342	0.135	2.477
Greece	2,571,048	41,944	0.653	0.057	0.710
Croatia	7,744,205	16,719	1.973	0.938	2.911
Hungary	10,691,907	33,435	2.717	0.989	3.706
Ireland	83,507	31,622	0.021	0.000	0.021
Italy	3,222,575	237,434	0.815	0.017	0.832
Kosovo	1,987,845	6,349	0.511	0.189	0.700
Lithuania	4,277,903	10,234	1.093	0.486	1.579
Luxembourg	166,194	3,837	0.042	0.003	0.045
Latvia	2,163,980	6,193	0.551	0.214	0.765
Montenegro	5,410,220	2,838	1.384	1.375	2.759
North Macedonia	2,752,799	6,397	0.704	0.321	1.025
Northern Ireland	2,063,254	8,350	0.527	0.158	0.685
Netherlands	14,324,203	74,270	3.654	0.889	4.542
Norway	10,022,831	74,302	2.550	0.455	3.005
Poland	9,224,208	99,279	2.350	0.300	2.650
Portugal	1,256,917	39,740	0.326	0.018	0.344
Romania	4,556,752	36,778	1.161	0.192	1.354
Serbia	4,851,458	28,430	1.238	0.272	1.510
Sweden	8,255,218	86,149	2.126	0.297	2.422
Slovenia	9,508,470	12,263	2.424	1.592	4.017
Slovakia	13,727,915	17,866	3.474	2.268	5.742
Ukraine	3,100,803	110,959	0.760	0.058	0.818
TOTAL	**294,165,266**	**2,318,462**	**75.000**	**25.000**	**100.000**

**Note: ACER notes marginal differences in the final results when the calculations are carried out on a yearly base compared to ENTSO-E's approach which considered the two semesters separately. The difference appears to be related to the way transits and loads are considered when adding an additional ITC party during the year. The differences in the final net positions were deemed insignificant by ACER, rendering no need for further actions for the implementation of the 2024 ITC mechanism. However, to avoid such complexity in the future, ACER advises adding new ITC Parties before the ITC implementation year.*

[48] This is the total amount of electricity which exits the national transmission system to distribution systems and to end consumers directly connected to the transmission system, as well as to electricity producers for their consumption in the generation of electricity.

Table 7: Value of losses used for the ITC mechanism between 2019 and 2024 (EUR/MWh), and relative change compared to 2023

	2019	2020		2021		2022		2023		2024	
ITC Party	Value	Value	Change compar-ed to 2019	Value	Change compar-ed to 2020	Value	Change compar-ed to 2021	Value	Change compar-ed to 2022	Value	Change compar-ed to 2023
AL	50.00	50.00	0%	50.00	0%	50.00	0%	74.98	50%	74.98	0%
AT	47.04	57.79	144%	50.74	-12%	115.00	127%	373.78	225%	168.22	-55%
BE	44.44	53.84	24%	55.76	4%	55.02	-1%	130.76	138%	108.10	-17%
BA	69.78	64.22	-19%	55.93	-13%	56.21	1%	56.21	0%	56.21	0%
BG	56.18	56.76	20%	58.40	3%	67.51	16%	215.29	219%	125.62	-42%
HR	56.69	59.02	73%	53.86	-9%	98.02	82%	177.48	81%	143.95	-19%
CZ	55.24	55.73	32%	44.30	-21%	73.03	65%	275.37	277%	146.26	-47%
DK	50.87	46.02	115%	37.48	-19%	109.58	192%	268.13	145%	110.04	-59%
EE	47.57	45.23	98%	42.12	-7%	94.33	124%	207.18	120%	98.80	-52%
FI	34.40	34.62	6%	33.46	-3%	36.48	9%	63.00	73%	63.00	0%
FR	40.27	45.18	36%	50.01	11%	54.85	10%	206.47	276%	168.24	-19%
DE	36.59	49.32	44%	45.27	-8%	52.77	17%	138.98	163%	179.60	29%
GB	68.08	56.19	151%	52.51	-7%	170.85	225%	318.49	86%	144.73	-55%
GR	56.70	66.60	232%	54.00	-19%	188.50	249%	364.50	93%	125.50	-66%
HU	49.05	58.09	42%	48.32	-17%	69.76	44%	292.39	319%	158.66	-46%
IE	64.14	59.44	36%	50.61	-15%	87.50	73%	294.11	236%	173.90	-41%
IT	62.96	54.09	106%	41.07	-24%	129.69	216%	314.00	142%	130.42	-58%
KS	44.00	44.88	27%	46.42	3%	55.78	20%	111.66	100%	109.78	-2%
LV	47.90	46.06	66%	41.90	-9%	79.39	89%	264.50	233%	155.79	-41%
LT	47.25	46.38	23%	39.38	-15%	58.24	48%	312.78	437%	96.82	-69%
LU	41.45	51.62	54%	39.81	-23%	63.66	60%	368.87	479%	143.53	-61%
ME	62.99	54.94	115%	53.39	-3%	135.67	154%	196.85	45%	141.77	-28%
NL	60.36	49.73	-20%	48.74	-2%	48.52	0%	102.19	111%	258.75	153%
MK	64.25	59.87	174%	55.90	-7%	175.75	214%	220.00	25%	114.80	-48%
NI	64.14	59.44	36%	50.61	-15%	87.50	73%	294.11	236%	173.90	-41%
NO	44.03	39.22	31%	17.43	-56%	57.80	232%	129.88	125%	72.79	-44%
PL	56.06	62.85	37%	53.94	-14%	76.87	43%	206.46	169%	167.36	-19%
PT	61.00	57.82	46%	45.03	-22%	89.01	98%	250.60	182%	78.43	-69%
RO	43.15	57.18	95%	57.26	0%	83.99	47%	89.59	7%	90.25	1%
RS	60.00	58.00	11%	50.20	-13%	66.72	33%	132.00	98%	70.00	-47%
SK	45.27	58.16	98%	52.29	-10%	89.42	71%	400.68	348%	162.14	-60%
SI	46.08	45.80	109%	45.80	0%	96.15	110%	296.12	208%	157.11	-47%
ES	57.34	55.48	65%	34.06	-39%	94.48	177%	206.97	119%	101.21	-51%
SE	28.45	43.73	74%	33.21	-24%	49.43	49%	130.52	164%	93.25	-29%
CH	72.72	63.95	90%	50.58	-21%	138.42	174%	290.35	110%	204.36	-30%
UA	-	-	-	-	-	-	-	-	-	102.16	NA

Note: For values of losses from 2011 to 2019 please refer to ACER Report on the implementation of the ITC mechanism in 2023 (2025).

Table 8: Country specific data on the value and valuation of losses[49]

ITC Party	Value used for tariffs (before reconciliation) [EUR/MWh]					Is the value used in tariffs reconciled ex-post based on actual costs?	Actual costs of procurement of energy to cover losses [EUR/MWh]				
	2020	2021	2022	2023	2024		2020	2021	2022	2023	2024
Austria	57.54	50.74	69.7	374.04[50]	179.82	yes	57.54	50.74	69.7	374.04[50]	179.82
Belgium	53.84	55.76	48.75	57.60	111.10	yes[51]	45.25	76.81	167.97	121	90.40
Bulgaria	56.76	58.4	67.51	215.29	125.62	no	48.99	105.41	263.23	137.63	101.89
Croatia	59.02	53.86	70.61	177.48	143.95	yes	51.63	79.8[52]	185.98	107.41[53]	104.28
Czech Rep.[54]	55.73	44.3	75.16[55]	288.45	149.39	yes	47.02	78.44	163.82[56]	168.04[57]	127.69[58]
Denmark	41.04	34.94	104.06	370.71	no data	yes	20	79[59]	237.81	92.99	no data
Estonia	36.002	36.002	78.98	78.98	78.98	yes	35.04	93.21	206.84	98.21	92.56
Finland	no data					no data	40.205	49.473	60.32	45.09	47.37
France	42.17	50.01	47.52	46.82	47.32	yes	45.28	50.01	44.60	193.70	151.49
Germany	49.32	45.28	52.77	138.98	179.60	yes[60]	46.85	44.59	58.51[61]	139.30[62]	184.31[63]
Greece[64]	no value used[65]					no value used	48.22	128.22	285.82	125.32	109.81
Hungary[66]	57.31	51.24	65.78	269.14	161.45	yes	52.73	58.54	119.18	277.90	145.92
Ireland	no value used					no value used	59.44	50.61	87.50	294.11	173.90
Italy	no value used					no value used	41.13	129.25	314.51	130.29	111.26
Latvia	31.28	36.07	79.18	143.8	155.79	yes	33.1	96.56	236.92	143.16	154.78

[49] The table includes the values of losses used for national tariff purposes and the value of losses corresponding to actual costs of procurement of energy to cover losses. The information for year 2022, was provided by NRAs in May and June 2024. The information for years 2019-2021 is imported from ACER's Recommendation No 01/2023 (p. 12.) and available here.
[50] AT: The values for 2023 do not apply for the months of January and February in which a value of 438,31 EUR/MWh was applied.
[51] BE: The Belgian NRA explains the tariffs for the ongoing period compensate the values before reconciliation but the tariffs for the next period will compensate for the difference between the actual costs and the value before reconciliation.
[52] HR: Yearly average exchange rates between HRK and EUR: 7.53 in 2020, 7.52 in 2021, 7.53 in 2022. Since 1 January 2023, Croatia has been in the eurozone.
[53] HR: Preliminary value.
[54] CZ: Yearly average exchange rates between CZK and EUR: 26.44 in 2020, 25.65 in 2021, 24.57 in 2022 and 24.01 in 2023 (for 'actual costs of procurement of losses'), 26.05 for 2020, 27.00 for 2021, 24.57 for 2022 and 24.01 for 2023 (for 'values used for the ITC mechanism' and 'value used for tariffs').
[55] CZ: using the exchange rate of 11.10.2021.
[56] CZ: using the exchange rate of 15.06.2023.
[57] CZ: Fixed exchange rate EUR/CZK as of 18.10.2024.
[58] CZ: using the exchange rate EUR/CZK as of 14.11.2025 (24.21).
[59] DK: Yearly average exchange rates between DKK and EUR: 7.45 in 2020, 2021, 7.44 in 2022 and 7.45 in 2023.
[60] DE: The German NRA explains that the ex-ante estimated losses costs are reimbursed via tariffs. The difference between estimated and actual losses costs including a potential bonus or malus are reimbursed ex-post via a regulatory account.
[61] DE: the values include technically-related operating consumption of the TSOs but they do not include offshore losses.
[62] DE: the values include technical operating consumption of the TSOs but they do not include offshore losses.
[63] DE: the values include technical operating consumption of the TSOs but they do not include offshore losses.
[64] GR: No formal value exists for the purpose of tariff setting. Each supplier includes the estimated cost of losses in their total retail tariff to final consumers.
[65] GR: No formal value exists for the purpose of tariff setting. Each supplier includes the estimated cost of losses in their total retail tariff to final consumers.
[66] Yearly average exchange rates between HUF and EUR: 335 in 2020, 375 in 2021, 391.33 in 2022, 382.78 in 2023, and 390.85 in 2024 (I – VIII. For the value used for tariffs) and 395.16 (for the actual cost of procurement).

ITC Party	Value used for tariffs (before reconciliation) [EUR/MWh]					Is the value used in tariffs reconciled ex-post based on actual costs?	Actual costs of procurement of energy to cover losses [EUR/MWh]				
	2020	2021	2022	2023	2024		2020	2021	2022	2023	2024
Lithuania	46.38	39.38	58.24	36.91	96.82	yes	33.43	95.34	201.73	76.14	73.89
Luxembourg	51.62	39.81	63.66	368.87	no data	yes	54.84	43.76	65.24	368.91	no data
The Netherlands	56.22	56.62	51.33	57.20	58.62	yes[67]	41.29	86.19	233.09	251.92	115.43
Norway[68]	36.56	20.66	41.98	131.59	57.33	yes	10.74	65.94	144.39	66.19	43.60
Poland[69]	62.85	53.94	76.87	206.46	167.36	no	55.95	69.74	122.47	186.07	126.37
Portugal	no value used					no value used	34.74	113.38	167.68	87.91	61.98
Romania	57.18	57.26	84.67	90.19	90.71	yes	53.14	92.03	158.15 [70]	95.71	108.76
Slovakia[71]	58.16	52.29	89.41	400.68	162.14	no	information not available to the NRA				
Slovenia	45.8	45.8	96.15	296.12	157.11	yes	52.32	70.85	160.66	141.99 [72]	140.30 [73]
Spain	no value used					no value used	34.83	112.16	197.04	95.89	71.56
Sweden	18.3	56	98	56.44	36.06	yes	18.3	56[74]	98	56.44	36.06

[67] NL: The Dutch NRA explains 75% of the difference between the estimated the realized costs (volume*price) is settled ex-post. When the deviation between the estimated costs and realised costs exceeds 20%, all costs above the 20% threshold are settled.
[68] NO: Yearly average exchange rates between NOK and EUR: 10.7207 in 2020, 10.1648 in 2021, 10.1040 in 2022 ,11.4206 in 2023 and 11.6276 in 2024.
[69] PL: Yearly average exchange rates between PLN and EUR: 4.4448 in 2020, 4.5674 in 2021, 4.6838 in 2022 and 4.541 in 2023.
[70] RO: Yearly average exchange rates between RON and EUR: 4.8694 in 2020, 4.9481 in 2021, 4.9315 in 2022 and 4.9465 in 2023.
[71] SK: The NRA sets the price ex-ante (t-1), based on the average market price (volumes of losses are subject to later adjustments).
[72] SI: Only around 40% of the volumes were purchased under long-term contracts before the start of 2023. For the remainder of the volumes, the plan took into account the market price in PX in accordance with the methodology. The final price was the result of actual purchases on the long and short term markets.
[73] SI: Actual value not yet finally reconciled but no significant deviations are expected.
[74] Yearly average exchange rates between SEK and EUR: 10.4867 in 2020, 10.1449 in 2021, 10.6317 in 2022 and 11.4765 in 2023.

Table 9: Country-specific information on the procurement of losses, on determination of the value of losses and on the respective basis[75]

	How are losses procured?	What is the basis for the calculation of losses and how is the value of losses determined (for the purpose of the ITC mechanism)?	How is the basis for the valuation of losses defined?	Is the value of losses used for the ITC mechanism calculated on the same basis/criteria as for national purposes?
Austria	The TSO procures the energy on the short-term and long-term market and organizes tenders.	**Power exchange market and tenders** Calculation method: Long-term market data, short-term market data and tenders The average price of TSO's procurement in year Y becomes the value of losses in year Y+2, which is audited and approved by the NRA. This value is also used for the ITC monitoring in year y+2.	The procurement path is confirmed at the beginning of the period. The final value is confirmed by the NRA via the cost audit process based on the costs occurred by the procurement of energy to cover losses.	Yes
Belgium	Balance Responsible Parties compensate transmission losses of voltage level >70 kV 'in kind' and TSO compensates at regional level, i.e. between 30kV and 70 kV) by organising monthly, yearly and quarterly tenders.	**Power exchange market and tenders** Long-term market data, short-term market data and tenders Valuation of losses is done with the tariffs proposal every four years taking into account historical, present and forward (Cal 1, 2, 3) market values. The value of losses used for the purpose of the ITC mechanism are approved values in the tariff proposal.	Proposed by the TSO in the tariffs proposal and approved by the NRA.	Yes
Bulgaria	The TSO procures the energy on the short-term and long-term market.	**Power exchange market** Long-term market and short-term market data Prices of futures traded at Power Exchange for the next regulatory period are multiplied by an adjustment factor reflecting the deviations between the average day-ahead market price for base load for the preceding calendar year and the TSO's achieved weighted average day-ahead market price for the preceding calendar year.	Set by the NRA.	Yes

[75] The information is imported from ACER's Recommendation No 01/2023 (and updated based on information provided by NRAs in autumn 2024), p. 13-20 available here.

	How are losses procured?	What is the basis for the calculation of losses and how is the value of losses determined (for the purpose of the ITC mechanism)?	How is the basis for the valuation of losses defined?	Is the value of losses used for the ITC mechanism calculated on the same basis/criteria as for national purposes?
Croatia	The TSO procures the energy on the short-term and long-term market and organizes tenders.	**Power exchange market and tenders** Long-term market data, short-term market data and tenders The value was usually determined in September of year *Y* for the year *Y*+1 and previous tenders for the planned year were considered. For the remaining part, futures contracts on HUDEX and projections using day-ahead prices from CROPEX were used. The ratio of long and short-term procurement was determined by the TSO for the next year. The usual delivery period of the tendered energy was 1 year or several years and less often 1 quarter or 1 month. In the new Methodology from 2022, price for anticipated costs and unit price for losses with first application in 2024 for 2025 and onwards, is determined based on formulas in the Methodology. Input in the Methodology is the EEX CROPEX futures price. Relative value of losses for *Y*+1 corresponding to a volume of transmitted electricity (%) is also determined by the Methodology based on the historical data. Final volume (MWh) for *Y*+1 is determined based on the transmitted volume of electricity for *Y*+1 (MWh) anticipated by TSO.	The TSO sends annually to the NRA the document including the value and the corresponding calculation method and the NRA approves it.	yes
Czech Republic	The TSO procures the energy on the short-term market and suppliers via tenders.	**Power exchange market and tenders** Long-term market data short-term market data and tenders Future contracts (BL CAL, BL Q) and day-ahead market data are used. All the tenders already organised are also considered. Tenders are organised approximately 4 times per year with the delivery period of 3 months or 1 year.	Valuation of losses is done in regard with Methodology set by the NRA.	yes
Denmark	The TSO procures the energy on the short-term market.	**Power exchange market** Long-term market data Weighted average value of Nasdaq commodities OMX forward price is used. The price used in year Y is based on the forward price from November of year Y-1. Price of the EPAD contracts and balancing costs is also included.	The TSO determines the value of losses for the purpose of the ITC without NRA approval, however the NRA assesses whether the method defined by the TSO meets certain high-level principles, such as being objective, reasonable, non-discriminatory and transparent.	yes[76]
Estonia	The TSO procures the energy on the short-term market.	**Power exchange market** Short-term market data Day-ahead prices of Nord Poll market are used. 1/2/3/6/12 months average price of the Estonian price area is used.	The value of losses for the purpose of the ITC mechanism in 2024 is determined by the TSO without NRA approvals.	yes

[76] The Danish NRA explains the only difference is that for internal losses, the TSO uses a price based on actual short-term market price per bidding zone with an additional supplement to cover risks.

	How are losses procured?	What is the basis for the calculation of losses and how is the value of losses determined (for the purpose of the ITC mechanism)?	How is the basis for the valuation of losses defined?	Is the value of losses used for the ITC mechanism calculated on the same basis/criteria as for national purposes?
Finland	The TSO procures the energy on the short-term market.	**Power exchange market** Long-term market data The estimated total cost of losses is calculated by grid losses x (system price+SYS-FI area price difference)+half of the estimated losses on the FI-SE interconnectors x (system price + SYS-SE area price difference) + hedged volume x (hedged price - system price), where system price, SYS-FI&SYS-SE area price differences are based on Nasdaq's forward prices at the time of budgeting; SYS-SE price difference = average of SYS-SE1 and SYS-SE3 prices; hedged price does not include SYS-FI area price difference; resolution is one month and yearly cost is sum of monthly costs.	Set by the TSO, whereas the NRA is only able to supervise calculation methods and costs of losses ex-post	yes
France	The TSO procures the energy on the short-term and long-term market and it organizes tenders.	**Power exchange market** Long-term market data and tenders Future prices from market exchange are used to adjust the historical data about cost of energy and capacity for losses compensation. For the value in 2021, the prices published in October 2020 were used. The historical data used is based on the actual costs of purchases made by the TSO and on costs from the previous years. The value of losses for the purpose of the ITC mechanism in 2021 is the cost of losses in 2021 as defined by the tarif d'utilisation des réseaux publics de transport d'électricité (TURPE HTB) deliberation (published January 21st, 2021).	The basis is set by the NRA in the tariff d'utilisation des réseaux publics de transport d'électricité.	yes
Germany	The TSO procures the energy on the long-term market (e.g. through tenders) and short-term market.	**Power exchange market** Long-term market data The value of losses is calculated as the weighted average of the base and peak future prices. The future prices are the mean of the settlement prices over a fixed period (1 October of Y-2 to 30 September of Y-1) and the weighting of the Base and Peak Future prices is based on historical data.	The methodology for valuing losses is laid down in the respective TSOs' voluntary self-commitments on grid losses which is approved by the NRA[77].	yes
Greece	The TSO procures the energy on the short-term market.	**Power exchange market** Long-term market data The annual baseload forward product price (as observed in relevant markets at the time of the submission of the value) is used as a best estimate for the market prices and the cost of losses in the next year.	The NRA approves the basis for the calculation of the value of losses for the purpose of the ITC mechanism which is the annual baseload forward product price.	yes

[77] The German NRA provides the link to the respective publications.

	How are losses procured?	What is the basis for the calculation of losses and how is the value of losses determined (for the purpose of the ITC mechanism)?	How is the basis for the valuation of losses defined?	Is the value of losses used for the ITC mechanism calculated on the same basis/criteria as for national purposes?
Hungary	The TSO procures the energy on the short-term and long-term market and organizes tenders.	**Power exchange market** Long-term market data and short-term market data For year Y, the average of HUDEX Future Baseload prices of the first 8-9 months of year Y-1 and HUPX DAM prices continuously are taken into account. The prices of tenders substitute the prices on HUDEX, if they are lower, however, there has been no successful tender for years.	The method of determination of the value of losses as well as the criteria used for the valuation of losses is set in the tariff methodology issued by the NRA.[78]	yes
Ireland	The Transmission Loss Adjustment Factors (TLAFs) are applied to generators to ensure that that the costs of transmission losses are borne by market participants who cause them. TLAFs are applied to generators' outputs so that their contribution to the market is adjusted. The value of TLAFs depends on the generator point of connection to the grid.[79]	**Direct contracts** Losses' values are calculated based on the average Directed Contracts (DC) price for the same period. DC contracts are set by the NRAs quarterly for both Ireland and Northern Ireland. The DC prices are calculated using a formula which takes as inputs the prices of gas, coal and CO2.	The basis is set by the NRA for the ITC mechanism purposes only.	not applicable (no value is calculated for national purposes)
Italy	Suppliers procure the energy by buying additional energy for their consumers from all markets available.	**Power exchange market** Short-term market data The volume-weighted average clearing price which resulted from the Italian Power exchange (day-ahead market) was used. For the ITC mechanism in 2024, market data until October 2023 were used.	The basis is set by the TSO using the basis defined by the NRA for the procurement of losses[80].	yes
Latvia	The TSO procures the energy on the short-term market.	**Power exchange market** Short-term market data Day-ahead market price forecast provided by an external party (SKM Market predictor) for the Latvian area was used.	The basis is set when the NRA approves network tariffs.	yes

[78] The Hungarian NRA provides the link to the respective publication.
[79] Cf. ACER transmission tariff report (2019).
[80] The Italian NRA explains that the regulation sets out that the values of national losses depend on market outcomes, because losses are procured directly in the market. The TSO takes into account that the losses are paid directly in the market as extra-energy to be bought by supplier and eventually implicitly charged to consumers at the market price.

	How are losses procured?	What is the basis for the calculation of losses and how is the value of losses determined (for the purpose of the ITC mechanism)?	How is the basis for the valuation of losses defined?	Is the value of losses used for the ITC mechanism calculated on the same basis/criteria as for national purposes?
Lithuania	The TSO procures the energy on the short-term market.	**Power exchange market** Long-term market data Electricity future prices on Nasdaq exchange are used.	The NRA approves the cost of losses on the national system. The same value is used for the ITC mechanism, although the TSO is not obliged by the NRA to use the same value.	yes
Luxembourg	The TSO organizes tenders. Differences between real and ex-ante estimated volumes are sold or bought from the spot market.	**Tenders** 3 tenders are organised each year by the TSO to cover the losses of the coming year and the winning prices are used. Quantities are estimated based on past experience.	The legal framework in Luxembourg obliges the TSO to organise the procurement of losses through transparent and non-discriminatory market-based procedures.	yes
The Netherlands	The TSO procures the energy through tenders. The settlement is based on a fixed price agreed through the tender (half of the estimated tender) and the day-ahead price (the other half of the estimated volume). The TSO performs this settlement with the supplying party from the tender and is therefore not active on the day-ahead market itself.	The value of losses is based on the losses costs and volumes included in the tariff decision 2023. These losses include an estimate based on the average losses in 2018-2020 and an ex-post correction for 2021. Losses costs are divided by a weighted average of the volumes of 2018-2021.	The method for the valuation of losses is set by the TSO without NRA approval.	yes
Norway	The TSO procures the energy on the short-term market.	**Power exchange market** Long-term market data Nasdaq quarterly forward price is used with some adjustments. It is gathered around 1 November each year, depending on the deadline set by ENTSO-E. A volume-weighted average day-ahead price for previous years is calculated and compared to the NO1 area price. The calculated difference for the last 4 years is added to the forward price as a risk premium which can also be negative. In addition, 11 Nok is added to the price in order to cover risk and expenses related to losses.	The NRA sets a method for calculating losses for network tariff purposes. The TSO applies the same method for the ITC mechanism.[81]	yes

[81] The Norwegian NRA explains that due to the reconciliation of the estimation of losses in the revenue cap with actual spot prices at the end of the year, there may be a considerable difference in the respective values depending on the situation in the power markets.

	How are losses procured?	What is the basis for the calculation of losses and how is the value of losses determined (for the purpose of the ITC mechanism)?	How is the basis for the valuation of losses defined?	Is the value of losses used for the ITC mechanism calculated on the same basis/criteria as for national purposes?
Poland	The TSO procures the energy on the short-term and long-term market and it can also organize tenders.	**Power exchange market** Long-term market data The value of losses for 2024 was calculated on the basis of future contracts for year 2024 traded from January 2021 to October 2023 (BASE_Y and PEAK_Y) at the Polish Power Exchange. The value of losses is determined as a volume-weighted average of traded volumes since beginning of contract trading for the given year, applying BASE/PEAK share weight of 74% and 26%.	The basis of calculation of the value of losses is approved during the process of approving the network tariffs. There is no separate approval of the value of losses used for the ITC mechanism, but the unit price of losses included in the calculation of national tariff is used for the ITC purpose of the ITC mechanism.	yes
Portugal	Suppliers procure the energy by buying additional energy for their consumers from the short-term market.	**Power exchange market** Short-term market data Values of losses are calculated based on the weighted-average hourly price for day-ahead energy market MIBEL for the whole year for the Portuguese area.	Rules and principles for the procurement of energy and for losses compensation are set by the 'Access to Networks and Interconnections Code' approved by the NRA.	not applicable (no value of losses is used for national purposes)
Romania	The TSO and DSOs procure the energy directly from producers, from the power exchange (long-term and short term market) or through suppliers.	**Power exchange market and Bilateral contracts** Long-term, short-term market data and bilateral contracts The price is estimated in the reference year of the regulatory period and is established based on historical data available at that time. The calculation is based on the average price achieved by the DSOs and the TSO. The recognized purchase price of electricity to cover losses is the minimum between the price realized by the TSO and a reference price (which is calculated as an average between the prices achieved by DSOs and TSO, limiting the imbalances to 5% and eliminating extreme values). The estimated price is corrected annually ex-ante and ex-post, so that the costs of losses covered by tariffs are the costs effectively realized by the TSO (in efficient conditions). Every November, NRA provides to the TSO the value of losses used in the tariff calculation for the next year (estimated price) for the purpose of the ITC mechanism.	The basis is set by the NRA in Methodology for setting transmission tariffs.	yes

	How are losses procured?	What is the basis for the calculation of losses and how is the value of losses determined (for the purpose of the ITC mechanism)?	How is the basis for the valuation of losses defined?	Is the value of losses used for the ITC mechanism calculated on the same basis/criteria as for national purposes?
Slovakia	The TSO procures via long-term markets and additionally (if needed) on short-term market.	**Power exchange market** Long-term market data Daily average price of futures contracts traded at Slovakian Power Futures Cal-t (from 1 April of Y-1 to 30 June of Y-1) are used for year Y. $PLE(y)=CEPXE(y) \times (1+ 0.01\ k(y)) + Q(y)$, where: • *PLE*… price of electricity covering electricity losses during transmission in year *y*, • *CEPXE(y)*… average value of the daily prices of the official forward exchange rate list published by the PXE exchange (product Futures PXE SK BL Cal-t) for year *y*, • *k(y)*… coefficient for year *y* determined by the price decision, ranging up to 10 %, • *Q(y)*… the planned costs of the regulated entity for year *y* to cover deviation related to planned *losses* in year *y;*	Methodology to determine the value of losses is defined in the Slovak NRA decree No. 18/2017.	yes
Slovenia	The TSO procures the energy on the short-term and long-term market and organizes tenders.	**Power exchange market and tenders** Long-term market data and tenders For each year of the regulatory period, the planned price of electricity for losses for the purchases already made shall be determined on the basis of the prices already achieved for the annual purchases of electricity for losses made, and for the remaining quantities of electricity for losses, the planned price shall be determined on the basis of the average of the electricity prices for the band and peak products of all daily trades for the year of the regulatory period up to and including 31 August of the year preceding the start of the regulatory period, achieved on the Hungarian Energy Exchange. The planned annual price takes into account a 75 % share of the price for band energy and a 25 % share of the price for peaking energy, which is derived from the profile of the average daily electricity consumption diagram in the Republic of Slovenia. The final price for losses is a combination of the volumes already purchased in advance on a long term basis through tenders and volumes purchased on short term market (PX).	Methodology set by the NRA is determined in Legal Act on the methodology for determining the regulatory framework for the system operators[82].	yes

[82] The Slovenian NRA provides the link to the respective publication.

	How are losses procured?	What is the basis for the calculation of losses and how is the value of losses determined (for the purpose of the ITC mechanism)?	How is the basis for the valuation of losses defined?	Is the value of losses used for the ITC mechanism calculated on the same basis/criteria as for national purposes?
Spain	Suppliers procure the energy by buying additional energy for their consumers from the short-term market.	**Power exchange market** Short-term market data Hourly Power Exchange market prices are directly applied to national demand to obtain weighted estimation of the value. The computation for year Y is based on data from the rolling year at the time it must be reported (September to October of Y-1). The ITC value calculated by the TSO is typically based on the final electricity prices for the last 12 available months.	The calculation of the final electricity price for the demand (same value as losses) is designed and approved by the NRA after each month. The NRA also approved that any supplier or consumer must buy losses as any other part of their energy consumption.[83]	yes[84]
Sweden	The TSO procures the energy on the short-term market.	**Power exchange market** Long-term market data The value is based on the average price of purchased futures during the year prior the year of delivery. There is a mark-up on the ITC price based on volume and profile risk, price area risk, imbalance risk, cost for financial hedging and cost for physical trading. All risks are calculated based on outcome from the last three years.	The method for the valuation of losses is set by the TSO without NRA approval[85].	yes[86]

[83] The Spanish NRA provides the links to the relevant publications:
https://www.ree.es/sites/default/files/01_ACTIVIDADES/Documentos/ProcedimientosOperacion/BOE-A-2022-4969.pdf
https://www.cnmc.es/sites/default/files/2022-05/ComposicionPrecios_desde_abril2022_web.pdf
https://www.cnmc.es/sites/default/files/2023-02/Provisionales_2022.zip
[84] The Spanish NRA explains losses' price estimation is also used in incentives schemes for minimising losses for distribution.
[85] The Swedish NRA explains the NRA approved the total income, but not specifically the value of losses and that there are regulations and incentives in place to streamline the costs of losses.
[86] The Swedish NRA explains the only difference is that for internal losses, the TSO uses a price based on actual short-term market price per bidding zone with an additional supplement to cover risks.