



European Union Agency for the Cooperation  
of Energy Regulators

# ACER

## Report on the implementation of the ITC mechanism in 2022

17 July 2024



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## Executive summary

- (1) The Inter-Transmission System Operator Compensation ('ITC') mechanism provides compensation for the TSOs that are part of the ITC agreement ('ITC Parties') for the costs resulting from power losses and network investments ('infrastructure availability') to host cross-border transit flows across the EU.
- (2) The compensation is financed through the ITC Fund established by the European Network of Transmission System Operators for Electricity ('ENTSO-E'), as one of the mechanisms, to share cost and benefits of developing and operating electricity network infrastructure within Europe. Other co-existing mechanisms to share such costs and benefits are the cross-border cost allocation of infrastructure projects of EU relevance and congestion income distribution.
- (3) ACER notes in this context the ongoing discussions<sup>1</sup>, also among regulators, on the limitations of the current mechanisms for sharing costs of network infrastructure across Europe, including whether current mechanisms are in need of revision.
- (4) ACER has the general duty to oversee the implementation of the ITC mechanism and the management of the ITC Fund and report each year to the European Commission. In 2023, ACER was unable to issue a report on the implementation of the ITC mechanism in 2022, as the corresponding information requested by ACER by 5 September 2023 was shared by ENTSO-E only on 11 April 2024, i.e. with a significant delay compared to the previous years.
- (5) The conclusions that ACER drew when assessing the implementation of the ITC mechanism in 2022 can be categorised into three groups:
- (6) **First, in terms of numerical developments, ACER identified that:**
  - The ITC fund has been increasing in the last four years. After an exponential jump in 2022, due to the effect of the 2021-2022 electricity price shock on the determined values of losses, it reached its new record high of almost 605 million EUR in 2022, which constitutes a 66% increase compared to its value in 2021.
  - The increase of the value of losses hit both EU and non-EU ITC Parties. Only three ITC Parties (BE, NL, AL) provided the same or marginally lower value of losses for the ITC mechanism in 2022 compared to 2021, while the remaining 32 ITC Parties all reported increased values. The impact of the price increase on single ITC Parties, however, significantly varied across the ITC Parties, among others due to different procurement strategies of losses, hedging instruments and criteria for the determination of the value of losses for the purpose of the ITC mechanism. While for about third of the ITC Parties the increase was under 50%, in case of five ITC Parties (i.e. GR, NO, GB, IT, MK) the value of losses in 2022 was more than three times as high as in 2021.
  - In particular, the minimum and the maximum values of the losses used in the 2022 ITC implementation show greater divergence than ever before (i.e. more than five-fold), having the highest losses value applied for Greece (188.5 EUR/MWh) and the lowest applied for Finland (36.48 EUR/MWh).
  - Overall, the volume-weighted average value of losses of all ITC parties increased by 70% in 2022 compared to 2021 (i.e. from 44.75 EUR/MWh in 2021 up to 76.09 EUR/MWh), more than twice its lowest value of 35.36 EUR/MWh, recorded in 2017. ACER notes that the actual losses costs in 2022 reported by the NRAs were even higher than the values used for the ITC mechanism, on average about two-fold.
  - Since the electricity wholesale prices in the preceding year are often used as an input to estimate the cost of power losses, unless there will be changes in the calculation

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<sup>1</sup> E.g. Commission's EU Action Plan for Grids (2023) and TTE Council conclusions on "Advancing Sustainable Electricity Grid Infrastructure" (May 2024).



methodologies, the estimated value of losses is expected to further increase in the 2023 ITC mechanism and to drop from 2024 onwards along the decrease of wholesale prices.

- The net compensations and net contributions are concentrated in few ITC parties. Out of the 35 ITC parties, five (CH, PL, DK, GB, EE) received almost 2/3 of the total net compensation and two ITC Parties (IT, NO) paid almost half of the total net contributions, also suggesting their rather high weight in the overall transit losses costs in Europe, either by experiencing or triggering such losses.
- The share of the respective ITC Parties within the final net position has significantly changed for several countries<sup>2</sup>, confirming a trend of non-stable and non-predictable net positions observed already in the past, mainly arising from changing flows altering the pattern of transit flows and corresponding losses, and from the changing unit cost of such losses throughout Europe.
- In 2022, the Perimeter countries<sup>3</sup> paid 13 million EUR to the ITC fund, representing 2.2% of its total amount. This all time low (relative) contribution is the outcome of the record high amount of ITC Fund, while the amount of the scheduled flows between the Perimeter countries and the ITC parties was lower compared to the past.

(7) **Second, in terms of data accuracy and timeliness in implementing the ITC mechanism in 2022, ACER identified the following drawbacks:**

- As already detected by ENTSO-E, the vertical load values submitted by one of the ITC Parties (i.e. AT) were incorrect, which resulted in erroneous compensation payments in 2022<sup>4</sup>. Since the error was revealed only after the completion and the formal acceptance of the corresponding audit process, ENTSO-E had no contractual possibility stemming from the ITC Agreement to retrospectively correct the audited values. Instead, the AT ITC Party proposed voluntary compensation payments based on independently drafted contracts.
- Concerning transparency of the calculations underlying the costs of losses, an increasing number of unsatisfactory explanations provided by the concerned parties was observed by ACER. In particular, ACER notes that out of the 47 requests for clarification made by the parties in 2022, representing 5 times the average requests made in preceding years, 8 (concerning 3 ITC Parties: CH, EE, NL) were considered unsatisfactory by one or more requesting ITC Parties by the end of the audit, resulting in General Assembly decisions on the value, in two instances (CH, EE) maintaining the originally submitted value, in one instance (NL) applying a different value.
- Several ITC Parties provided updated values of losses after the contractual deadlines, which contributed to delays of the settlements of the ITC mechanism and the late data submission by ENTSO-E to ACER.

(8) **Third, concerning alignment with the goals and requirements set out in Commission Regulation No 838/2010, ACER deems that:**

- The implementation of the ITC mechanism and the management of the ITC Fund in 2022 is generally in line with the legal requirements, without prejudice to the need to introduce methodological improvements in line with previous recommendations made by ACER<sup>5</sup>.

<sup>2</sup> In terms of percentage points the highest changes in 2022 compared to 2021 in final net position is observed for ITC Parties of France, Germany, Great Britain, Switzerland, the Netherlands and Sweden. For Germany, the share in net compensation dropped; France and Great Britain became net recipients from net contributors; the Netherlands became net contributor from net recipient, Sweden's share increased in net contribution, while Switzerland's share increased in net compensation.

<sup>3</sup> Non-participating countries in the ITC mechanism, which are connected to the ITC Parties' networks.

<sup>4</sup> ENTSO-E informed that the error also applies for the ITC implementation in 2023.

<sup>5</sup> Namely, recommendation No 01/2023 to ENTSO-E, TSOs and NRAs, proposing some measures, which could be implemented without amendments of the relevant EU legislative framework (i.e. Regulation (EU) 2019/943 and Regulation (EU) No 838/2010). In short, 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.

In particular, increasing the number of snapshots for the estimation of losses, use of liquid forward-market prices for estimation for cost of losses and ex-post reconciliation of the costs of losses due to transits in the ITC mechanism are important elements to preserve cost-reflectivity.

- The drawbacks in data accuracy and timely proceedings signal the need for increased efforts in data audit, including more transparency regarding the determination of the value of losses and the input data used and enforcement of contractual deadlines. In this regard, ACER acknowledges that ENTSO-E's already took some efforts to tackle the experienced drawbacks (e.g. Market Committee's enhanced "plausibility check" routines, adopted "Guidance document on Audits"). However, the appropriateness and sufficiency of these additional measures, still remain subject to future ACER assessment, also in light of their first application.
- (9) Finally, ACER recalls, that in 2013, ACER issued its Recommendation No 05/2013 to the European Commission for a reform of the ITC mechanism. In its recommendation, ACER proposed limiting the scope of the mechanism to existing infrastructures and phasing out the corresponding ITC infrastructure fund, while suggested NRAs, where appropriate, to engage in ex-ante cross-border cost allocation agreements for new investments of EU relevance and implement an ex-post compensation mechanism for certain costs.

# 1. Introduction

- (10) The Inter-Transmission System Operator Compensation ('ITC') mechanism scheme is defined in Article 49 of Regulation (EU) 2019/943 and by Commission Regulation (EU) No 838/2010 on laying down guidelines relating to the ITC mechanism and a common regulatory approach to transmission charging<sup>6</sup> (the 'Regulation').
- (11) In line with the legal provisions set by these regulations, the ITC mechanism provides for transmission system operators ('TSOs') compensation for the costs of hosting cross-border flows of electricity ('transits') including providing cross-border access to the interconnected system. The ITC scheme was implemented on 3 March 2011.
- (12) The compensation is financed through a fund, i.e. the ITC Fund, which is established by the European Network of Transmission System Operators for Electricity ('ENTSO-E').
- (13) The ITC Fund consists of two parts which aim at covering, respectively,
  - the costs of the incurred transmission losses,
  - the costs of making infrastructure available.
- (14) TSOs or groups of TSOs being 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 export flows. Non-participating countries connected to the ITC Parties' networks ('Perimeter countries'<sup>7</sup>) pay a transmission system use fee for their scheduled imports from and scheduled exports to the ITC Parties' networks.
- (15) The implementation of the provisions of the Regulation regarding 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. In 2022, it comprised 35 ITC Parties<sup>8</sup>. The ITC Agreement contractually sets out ENTSO-E's and ITC Parties' duties and entitlements. It also sets out detailed ITC procedures, including the submission, audit and validation of data, calculation of compensation and contribution amounts, and the clearing and settlement of the ITC Fund.
- (16) In that context, the European Union Agency for the Cooperation of Energy Regulators ('ACER') has the general duty, pursuant to point 1.4 of Annex Part A of the ITC Regulation, to oversee the implementation of the ITC mechanism and report to the Commission each year on the implementation of the ITC mechanism and the management of the ITC fund. With regard to the valuation of losses, ACER has the specific responsibility, pursuant to point 4.4 of Annex Part A of the ITC Regulation, to verify the criteria for the valuation of losses at national level taking particular account that losses are value in a fair and non-discriminatory way. Since 2012, ACER prepares a yearly monitoring report on the implementation of the ITC mechanism and the management of the ITC Fund.<sup>9</sup>
- (17) In 2023, ACER was unable to issue a monitoring report on the implementation of the ITC mechanism in 2022 since the necessary data and information used for compiling this Report

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<sup>6</sup> OJ L 250, 24.9.2010, p.5.

<sup>7</sup> Belarus, Moldova, Morocco, Russian Federation, Turkey and Ukraine.

<sup>8</sup> TSOs from all EU Member States except Cyprus and Malta and from the following third countries: Albania, Bosnia and Herzegovina, Kosovo, North Macedonia, Montenegro, Norway, Serbia, Switzerland and United Kingdom (Great Britain and Northern Ireland as separate ITC parties).

<sup>9</sup> The previous ACER ITC Monitoring Reports are available at ACER's website: <https://www.acer.europa.eu/electricity/infrastructure/inter-tso-compensation-monitoring>

requested by ACER to be submitted by 5 September 2023, were provided by t ENTSO-E only on 11 April 2024<sup>10</sup>, i.e. with a significant delay compared to the previous years.

- (18) ENTSO-E explained the late data submission to ACER with the effects of the energy prices crisis, which impacted the determination of the losses costs values and caused a delay in the approval of the audited losses costs values, resulting in a delay in the provision and signature of all settlements. Regarding this latter ENTSO-E added that delays often incurred in collecting all signatures from ITC Parties and consequently ENTSO-E has implemented new processes for a more efficient collection of ITC Parties' signatures<sup>11</sup>.
- (19) In this Report, ACER has reviewed the implementation of the ITC mechanism and the management of the ITC Fund in 2022 based on:
- the ITC Agreement and its amendments,
  - relevant data and information received from ENTSO-E in relation to the implementation of the ITC mechanism in 2022
- (20) Additionally, ACER collected information from the National Regulatory Authorities ('NRAs') on the values of losses used for national transmission tariffs and about the actual costs of procurement of energy to cover losses.

## 2. Alignment between the 2022 ITC implementation and the Regulations

- (21) No major amendments to the ITC Agreement were introduced in 2022, as there were only annual and technical amendments, which do not affect the main elements of the ITC agreement. Amendments were made for:
- 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).
- (22) ACER concludes that the general arrangements are still generally in line with the guidelines set out in the Regulation. However, this finding is without prejudice to the need to introduce methodological improvements in line with previous recommendations made by ACER. ACER recalls that in its recent monitoring report on the implementation of the ITC mechanism<sup>12</sup>, also considering the extreme price volatility effects in 2021-2022 and the general tariffication principle of cost reflectivity introduced by Regulation (EU) 2019/943, ACER identified some shortcomings in the implementation of the ITC mechanism regarding the treatment of losses.

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<sup>10</sup> On 6 June 2024, ACER requested additional information and clarifications from ENTSO-E, which ACER received in two batches on 14 June and 17 June 2024.

<sup>11</sup> ENTSO-E informed ACER that the new process involves several key initiatives aimed at enhancing the efficiency of signature collection from ITC Parties. Firstly, weekly calls are now conducted between ENTSO-E Secretariat and Data Administrators to address general issues and specifically discuss any delays in signature submissions. Secondly, there is a centralized repository on the ENTSO-E extranet, continuously updated with an overview of signature collection for the entire year. Additionally, in case of delays, there is an increased reporting frequency at Market Committee level to ensure timely resolution of any issues that arise.

<sup>12</sup> ACER Report on the implementation of the ITC mechanism in 2021, [https://acer.europa.eu/sites/default/files/documents/Publications/ITC\\_MR\\_2022.pdf](https://acer.europa.eu/sites/default/files/documents/Publications/ITC_MR_2022.pdf)



- (23) In April 2023, ACER issued its Recommendation No 01/2023 on the Treatment of Losses for the Purpose of the ITC Mechanism<sup>13</sup> to ENTSO-E, TSOs and NRAs, addressing the lack of cost reflectivity with measures which may be implemented without amendments of Regulation (EU) 2019/943 and without amendments of Commission Regulation (EU) No 838/2010, in particular regarding the use of snapshots for calculating the volume of losses as well as how and when/how often the values of losses are determined for the purpose of the ITC mechanism.
- (24) In summary, the recommendations call for:
- a. Increase of the number of snapshots used for the estimation of the volume of losses due to transits;
  - b. 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
  - c. 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.
- (25) Since the ACER recommendations were issued only after the implementation of the 2022 ITC mechanism (subject to this Report), compliance check with the 2023 ACER Recommendations has not been carried out by ACER.
- (26) Finally, ACER recalls, that in 2013, ACER issued its Recommendation No 05/2013 to the European Commission for a reform of the ITC mechanism. In its recommendation, ACER proposed limiting the scope of the mechanism to existing infrastructures and phasing out the corresponding ITC infrastructure fund, while suggested NRAs, where appropriate, to engage in ex-ante cross-border cost allocation agreements for new investments of EU relevance and implement an ex-post compensation mechanism for certain costs. While these proposals still remain valid, more broadly, in light of the fragmented and somewhat insufficient mechanisms for sharing cost and benefits of building and operating electricity network infrastructure across Europe, discussions among regulators on the potential need for a holistic review of such mechanisms are ongoing<sup>14</sup>.

### 3. Accuracy of data

- (27) 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. The ITC Agreement includes yearly and monthly data audits and/or validation procedures involving all ITC Parties. Every year, before the financial settlements begin, an audit of the vertical load, the costs of losses and the capacity not allocated in a manner compatible with the congestion management methods as initially set out in Point 2 of Annex I of Regulation (EC) No 714/2009 and now required according to Regulation (EU) 2019/943<sup>15</sup> is carried out. During the year, before the monthly settlements are issued, several data validation procedures are performed involving all ITC Parties.

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[https://www.acer.europa.eu/sites/default/files/documents/Recommendations/ACER\\_Recommendation\\_01\\_2023\\_on\\_the\\_Treatment\\_of\\_Losses\\_for\\_the\\_Purpose\\_of\\_the\\_ITC\\_Mechanism.pdf](https://www.acer.europa.eu/sites/default/files/documents/Recommendations/ACER_Recommendation_01_2023_on_the_Treatment_of_Losses_for_the_Purpose_of_the_ITC_Mechanism.pdf)

<sup>14</sup> [https://www.acer.europa.eu/sites/default/files/documents/Publications/Future\\_electricity\\_system\\_challenges\\_2024.pdf](https://www.acer.europa.eu/sites/default/files/documents/Publications/Future_electricity_system_challenges_2024.pdf)

<sup>15</sup> 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 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).

- (28) In a letter dated 11 April 2024, ENTSO-E submitted to ACER data relating to the implementation of the ITC mechanism in 2022, as well as some relevant descriptive information. ENTSO-E provided explanations or a description of the results for:
- the calculation of the Perimeter countries' fee,
  - transit reductions including the explanation regarding each border where transits are reduced due to the allocation of capacity on interconnections which is not compatible with the applicable congestion management methods,
  - results of the yearly audit process in terms of identified errors,
  - the amendments of the ITC Agreement,
  - the computation of losses resulting from transit flows,
  - the decisions on value of losses in non-EU countries.
- (29) In the same letter, ENTSO-E informed ACER that the final settlements for 2022 (including the netted final settlements) had been signed by all ITC Parties.
- (30) Regarding the data quality ENTSO-E reported no missing or insufficient quality data in the 2022 ITC settlement. However, ENTSO-E noted that 9% of the snapshots have been delivered late, while 21% of the snapshots required corrections.
- (31) Further, ENTSO-E informed ACER that the first phase of the audit process (which allows ITC Parties to revise their losses costs values) resulted in several updates of the losses values after the contractually defined deadline. Given the rising electricity prices at the time, several of these late values were significantly higher than the preliminary values that had been submitted at the end of 2021.
- (32) During the second phase of the audit process, 9 ITC Parties<sup>16</sup> sent all-together 47 requests to other 13 ITC Parties<sup>17</sup> to provide explanation regarding the cost of losses in 2022, representing 5 times the average requests made in preceding years (i.e. 47 requests in 2022 vs. 7-9 requests per year between 2019-2021).
- (33) Out of the 47 requests, 8 (concerning 3 ITC Parties: CH, EE, NL) were considered unsatisfactory by one or more requesting ITC Parties by the end of the audit, resulting in General Assembly decisions on the value.
- (34) On 11 July 2022, the ENTSO-E Assembly decided that all values submitted before 1 June 2022 shall be accepted, except for one ITC Party (NL), where it was agreed with the concerned party, that the value for losses used in the Dutch tariff shall be used<sup>18</sup>.
- (35) ENTSO-E informed ACER that during the audit process of the ITC mechanism 2022, no errors for vertical load values were found. However, after completion of the audit process for the year 2023 an ENTSO-E internal analysis detected that the vertical load values submitted by one ITC Party (i.e. AT) for the 2022 and 2023 ITC audit processes were not correct, thus resulting in erroneous compensation payments in 2022 and 2023. As the audits in question have already been completed and formally accepted by the ENTSO-E Market Committee, ENTSO-E claimed that there is currently no foreseen contractual possibility stemming from the ITC Agreement to retrospectively correct the audited values.

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<sup>16</sup> By 25 February ITC parties can request other parties to provide explanation on information provided. In 2022, the following ITC Parties sent a request to other ITC Parties: AT, CZ, BE, DE, PL, PT, FR, NO, SE.

<sup>17</sup> By 25 February ITC parties can request other parties to provide explanation on information provided. In 2022, the following ITC Parties received a request from other ITC Parties: CZ, PT, GR, AT, MK, CH, NL, IT, FI, GB, EE, DK, ES.

<sup>18</sup> The discussion was about whether the NL ITC Party's value of losses was calculated on the same basis as the one approved by the NRA in respect of all losses on the national transmission system. The proposal of the Dutch TSO consists of the change in its own losses costs calculation methodology in order to align the ITC losses costs with those losses costs as included in national tariffs.

- (36) In ENTSO-E's Market Committee, the Austrian ITC Party proposed voluntary compensation payments based on independently drafted contracts<sup>19</sup> as well as it reviewed and adapted its internal data delivery process for the ITC vertical load reporting to prevent such cases in the future. Additionally, the Market Committee has established enhanced "plausibility check" routines, where reported vertical load data are checked for year-on-year differences to identify possible outliers. ENTSO-E added that further structural measures for the ITC mechanism to deal with such errors, which weren't detected during the audit process, will be analysed during the currently ongoing ITC re-evaluation process.
- (37) In line with its considerations in previous reports on the implementation of the ITC mechanism, ACER regards that the self-governance arrangement in the operation of the ITC mechanism is still broadly appropriate approach for assuring the accuracy of the operation of the ITC mechanism. However, increased efforts are required in data audit, including more transparency regarding the determination of the value of losses and the input data used and enforcement of contractual deadlines. In this regard, ACER acknowledges ENTSO-E's efforts already taken to tackle the experienced drawbacks (e.g. Market Committee's enhanced "plausibility check" routines, adopted Guidance document on Audits, which will be applied from 2023 onwards). However, the appropriateness and sufficiency of these additional measures, still remain subject to future ACER assessment, also in light of their first application.

## 4. Treatment of third countries

- (38) ACER notes that the ITC Agreement has not changed regarding the 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 of ACER are still valid.
- (39) 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 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.
- (40) In this regard, ACER recalls that in order not to discriminate regarding the treatment of ITC Parties as set out in Annex Part A of Regulation (EU) No 838/2010, the recommended practices in ACER's 2023 Recommendation on the treatment of losses for the purpose of the ITC Mechanism<sup>20</sup> should be applied not only to EU ITC Parties, but to all parties participating in the ITC mechanism.

## 5. ITC fund

- (41) In 2022, the ITC Fund amounted to 604.9 million EUR, consisting of 100 million EUR related to the costs of the transmission infrastructure made available for transits and 504.9 million EUR related to the costs of the incurred transmission losses due to transits. 592 million EUR or

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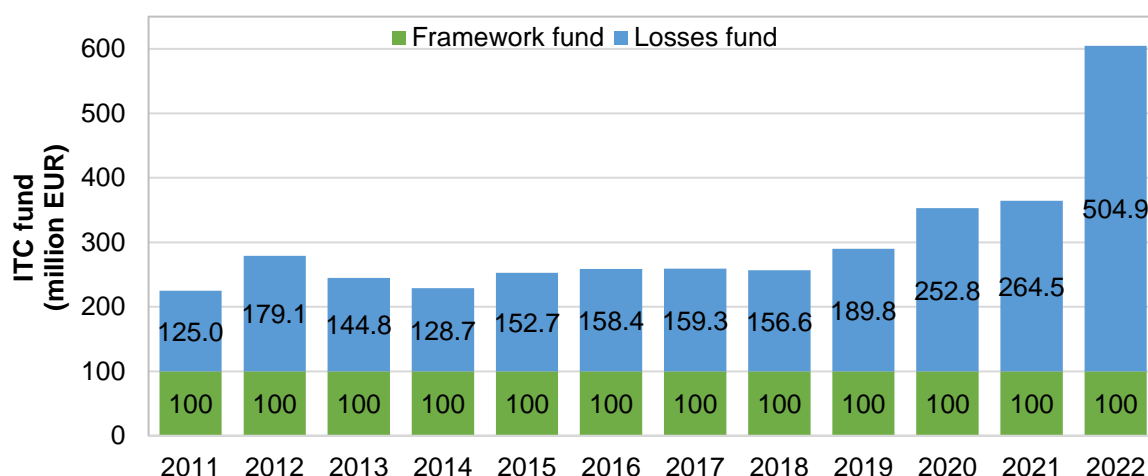
<sup>19</sup> Until 11 April 2024, 19 TSOs have agreed to participate in the corrective payment process for ITC 2022 and 2023.

<sup>20</sup> ACER Recommendation 01/2023 on the Treatment of Losses for the Purpose of the ITC Mechanism, [https://www.acer.europa.eu/sites/default/files/documents/Recommendations/ACER\\_Recommendation\\_01\\_2023\\_on\\_the\\_Treatment\\_of\\_Losses\\_for\\_the\\_Purpose\\_of\\_the\\_ITC\\_Mechanism.pdf](https://www.acer.europa.eu/sites/default/files/documents/Recommendations/ACER_Recommendation_01_2023_on_the_Treatment_of_Losses_for_the_Purpose_of_the_ITC_Mechanism.pdf)

97.8% of the total ITC fund was recovered through contributions from the ITC Parties and the remaining 13 million EUR or 2.2% through the Perimeter countries' fees.

- (42) As presented in Figure 1, after being relatively stable between 2015 and 2018, the ITC fund has continuously been increasing in the last four years, and after an exponential jump in 2022, reached its highest ever value. Compared to its size last year, it increased by 66% and compared to its size in 2018, it more than doubled (i.e. increased by 136%).
- (43) While the sum of the infrastructure part of the fund, which is set by the Regulation, has not changed, the losses part of the ITC Fund increased by 91% due to the effect of the electricity price shock in 2021 on the calculation of the values of losses for the purpose of the ITC mechanism.

Figure 1: ITC Fund size between 2011 and 2022



- (44) An overview of the compensations drawn from, and contributions made to the 2022 ITC Fund is provided in Table 2 in the Annex. The table includes the contributions from both the ITC Parties and Perimeter countries which made their contributions through their directly-connected ITC Parties.
- (45) 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). The share of net compensation or net contribution of each ITC Party (which is calculated as the net compensation/sum of all net compensations or as the net contribution/sum of all net contributions) in 2022 is presented in Figure 2 and Figure 3. As additional information, the corresponding shares for 2021 are also added to these figures and negative values indicate a shift in ITC Party's beneficiary role to the contributing one or vice versa. The total net compensation (which equals to the total net contribution) in 2022 amounted to 214.65, resulting in a significant 71% increase compared to the previous year (i.e. 125.5 million EUR).
- (46) ACER notes that in 2022, five ITC Parties (less than 15% of the ITC parties) together (CH, PL, DK, GB, EE)<sup>21</sup> received almost 2/3 of the total net compensation. All, but one of these countries (i.e. GB) received significant net compensations in 2021 as well.
- (47) Regarding net contributions, ACER observes that two ITC Parties (IT, NO) paid almost half of the total net contributions in 2022. ACER also observes that since the first implementation of the ITC mechanism in 2011 the highest share of net contribution to the ITC mechanism was all but one year provided by the Italian ITC Party (varying between 20-30%), while the second

<sup>21</sup> AT, CZ, SK and CH in 2020.

highest contribution came either from Norwegian ITC Party (varying between 5-18%) or from the French ITC Party (varying between 8-29% in years when it was a net contributor).

- (48) As illustrated in Figures 2 and 3, while most ITC parties maintained their negative or positive net position in 2022 compared to 2021, 7 ITC Parties (GB, FI, FR, KS, LV, MK, NL) changed the direction of their net position. Great Britain, France, North Macedonia and Latvia became net recipients, (GB and FR from a significant net contributor<sup>22</sup>), while Kosovo, Finland and the Netherlands became net contributors of the total compensation. ACER notes that in terms of percentage points, Great Britain, followed by France and Switzerland show the largest increase in the net position<sup>23</sup>, while Germany followed by Sweden and the Netherlands show the largest decrease<sup>24</sup>. While their share in the overall ITC budget is rather limited, in terms of relative increase of the amount of contribution (EUR) to ITC fund in 2022, Lithuania and Northern Ireland increased the most<sup>25</sup>.
- (49) Table 3 in the Annex shows the final net positions of each ITC Party since 2011. For 15<sup>26</sup> out of 35 ITC Parties or for 43% of all ITC Parties, the direction of the net balance has been the same every year (i.e. they have always been a net contributor or they have always been a net receiver). For the remaining 20 ITC Parties, the direction of their net balance has changed at least once.

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<sup>22</sup> GB and FR were significant contributors in almost each year since the first implementation of the ITC mechanism in 2011, with one exception in case of France in 2016.

<sup>23</sup> The net position of Great Britain and France increased by 18 percentage points, both becoming net recipient of compensation, and of Switzerland by 12 percentage points.

<sup>24</sup> The net position of Germany dropped by 18 percentage points, of Sweden and the Netherlands by 8 percentage points, with the Netherlands becoming net contributor.

<sup>25</sup> The amount of contribution from LT increased by more than 20 times, while for NI by about 13 times. Still their overall share of contribution within the ITC budget remained rather low, i.e. 1.7% and 0.7% respectively.

<sup>26</sup> Net receivers in each year: AT, DK, ME, PL, RS, SK, SI, CH. Net contributors in each year: AL, IE, IT, LU, NI, NO, RO.



Figure 2: Share of net compensation per ITC party within total net compensation in 2022 and 2021

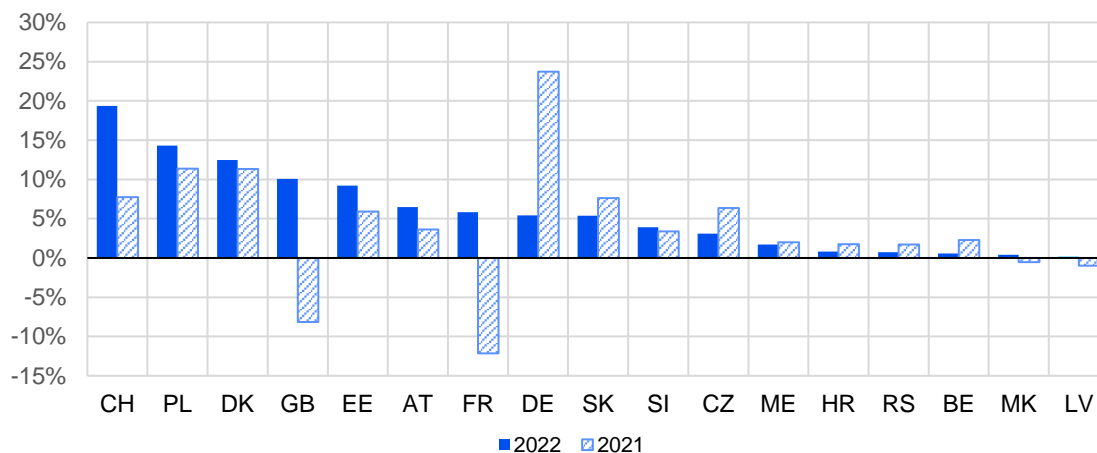
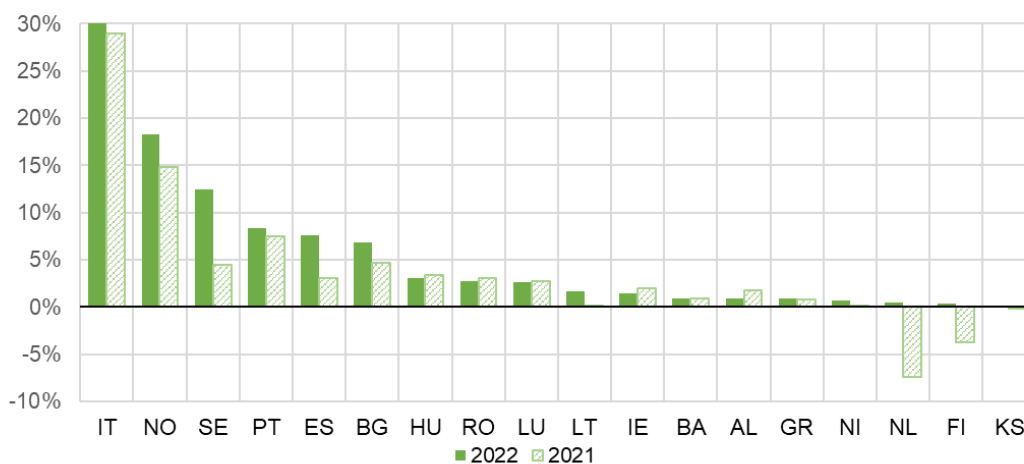


Figure 3: Share of net contribution per ITC party within total net contribution in 2022 and 2021



## 5.1. Contributions to the ITC fund

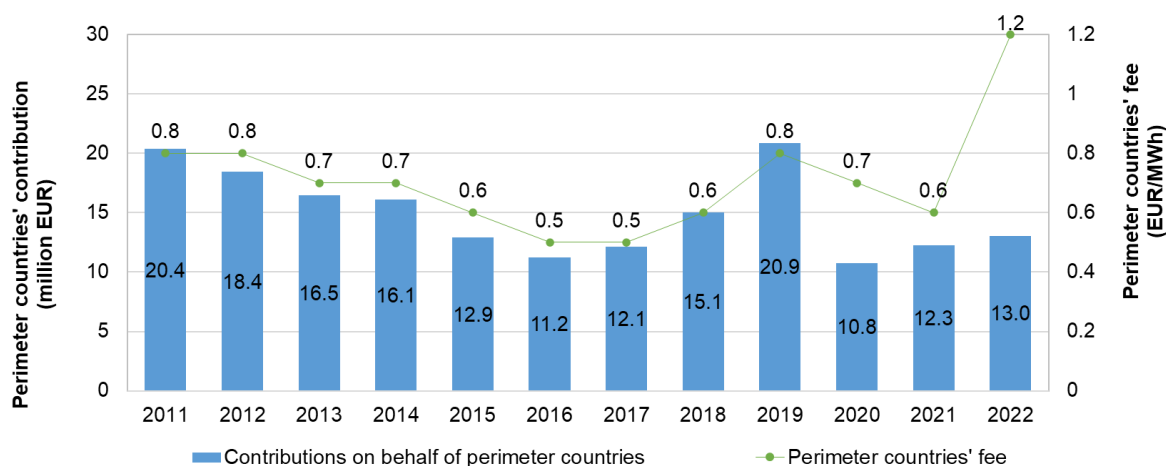
### 5.1.1. Perimeter countries' fee

- (50) 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.
- (51) For 2022, ENTSO-E reported no change in the methodology for calculating the Perimeter countries' fee (or 'Perimeter fee') which 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 both 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 both 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.

- (52) The Perimeter countries' fee for 2022 was calculated and approved by ENTSO-E at the value of 1.2 EUR/MWh<sup>27</sup>, which means that after a gradual decrease in the preceding two years, it suddenly doubled. The evolution of the Perimeter fee between 2011 and 2022 is presented in Figure 4, along with the Perimeter countries' contributions to the fund, which latter is evaluated in more details in Section 5.1.2 below.
- (53) According to the explanation by ENTSO-E, the main reason for this significant increase in the size of the perimeter fee in 2022 compared to 2021 is driven by the significant increase in losses costs as a result of the energy crisis. On average, the losses costs grew by 86% (unweighted), which significantly increased the amount of the 'With-and-without transit' fund. Since the amount of the considered historical flows<sup>28</sup> remained the same in the respective years (i.e. about 418 TWh)<sup>29</sup>, the increase of the 'With-and-without transit' fund was not balanced out by a comparable level of increase in the flows, thus the perimeter fee increased.

Figure 4: Perimeter countries' relative contributions and Perimeter countries' fee between 2011 and 2022



### 5.1.2. ITC Parties' and Perimeter countries' contributions

- (54) 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.
- (55) Table 4 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 2022, including the contributions made on behalf of the Perimeter countries with whom it has a direct connection.

<sup>27</sup><https://www.entsoe.eu/news/2022/07/19/assembly-approves-itc-audit-results-and-2022-perimeter-fee/#:~:text=The%202022%20perimeter%20fee%20has,%E2%82%AC%201%2C2%20%2F%20MWh>

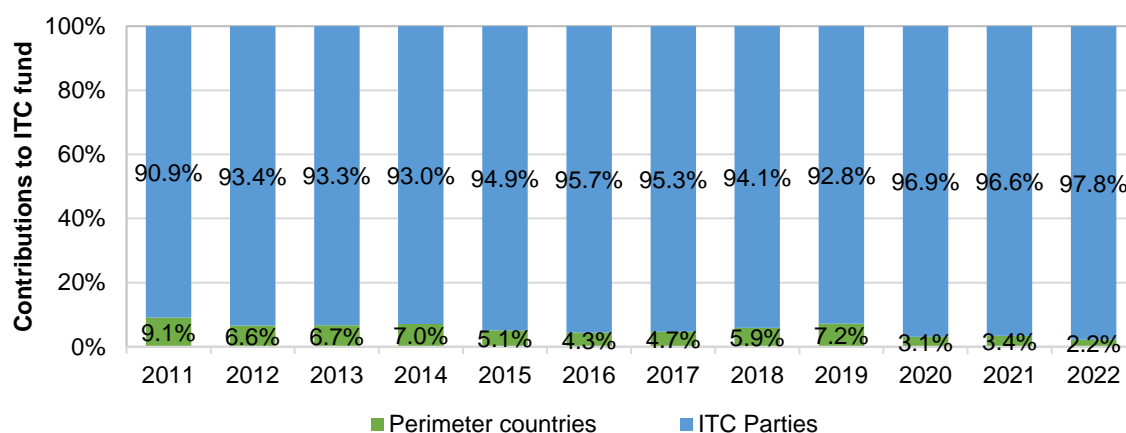
<sup>28</sup> i.e. The flows include the sum of net import flows of all ITC parties, the sum of net export flows of all ITC parties, the sum of scheduled import flows of all Perimeter Countries with each Edge ITC party and the sum of scheduled export flows of all Perimeter Countries with each Edge ITC party.

<sup>29</sup> The amount of flows in year Y-2 is used as an input for the calculation of the Perimeter countries' fee for year Y. I.e. year 2020 for the ITC implementation in 2022.

Shares of contributions from ITC parties and Perimeter countries between 2011 and 2022 are presented in Figure 5.

- (56) In 2022, Perimeter countries paid 13 million EUR to the ITC fund, representing 2.2% of its total amount. This is a lower relative contribution as in 2020 and 2021 when the ITC parties contributed with 10.8 million EUR (3.1%) and 12.3 million EUR (3.4%) respectively, and significantly lower than during the period before (i.e. between 2011 and 2019 when their contribution ranged between 4.3% and 9.1%). The lower relative contribution was observed despite the fact that the perimeter country fee in 2022 was significantly higher than any year before<sup>30</sup>. The reason behind the decrease of the Perimeter countries' relative contribution to the ITC fund lies in the significantly lower volume of the scheduled flows between the Perimeter countries and the ITC parties compared to the past volumes (i.e. 26.1 TWh in 2019, 15.4 TWh in 2020, 20.4 TWh in 2021 and approx. 10.9 TWh in 2022), as well as in the reported significantly increased overall amount of the ITC Fund. (For this latter, see Figure 1)

Figure 5: Shares of contributions to the fund between 2011 and 2022



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

## 5.2. Compensations from the ITC fund

- (58) Under the Regulation, the ITC Parties should receive compensation for losses incurred due to hosting cross-border flows and for making their infrastructure available to host these flows. The key input for the determination of the compensation amounts are the transits. More information on the transit consideration is provided in section 5.2.1 and on the compensations in sections 5.2.2 and 5.2.3 of this report.

### 5.2.1. Transit and its reduction

- (59) 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 set out congestion management methods as initially set out

<sup>30</sup> i.e. second highest perimeter country fee was 0.8 EUR/MWh in 2019, 2012 and 2011.

in Point 2 of Annex I of Regulation (EC) No 714/2009<sup>31</sup> and now required according to Regulation (EU) 2019/943. Ultimately, these reductions lead to decreased financial net positions of the concerned ITC Parties.

- (60) ACER notes that ENTSO-E took the following steps in line with the definition in the Regulation related to transits reductions:
- The affected ITC Parties indicated, for each concerned border, the overall exports and imports, as well as the schedules allocated in a manner compatible with the congestion management guidelines;
  - The ITC Data Administrators translated this information into the amount by which the relevant transit needs to be reduced;
  - The reduced transit represented the basis for calculating the compensation amounts relating to both the infrastructure and the losses parts of the ITC Fund.
- (61) Table 5 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 2022 due to existence of long-term priority contracts:
- the French-Swiss border (in both directions),
  - the Swiss-Italian border (in the direction towards Italy);
- (62) Based on the information provided by ENTSO-E, for the French-Swiss border (in both directions), capacity not allocated in a manner compatible with congestion management guidelines remained the same in 2022 as in 2021 and in 2020<sup>32</sup>. For the Swiss-Italian border (in the direction towards Italy) the capacity not allocated in a manner compatible with congestion management guidelines further decreased in 2022 compared to the (already marginal) amount in previous years<sup>33</sup>.
- (63) Shares of scheduled exchanges in 2022 that were allocated in a manner compatible and not compatible with the congestion management guidelines are presented in Figure 6. ACER notes that on each of the concerned borders the relative share of exchanges not allocated by means of implicit and explicit auctions reduced compared to 2021<sup>34</sup>. The amount of such exchanges also decreased in absolute amounts compared to last year, except on the French-Swiss border in the direction towards France, where it increased, as the total amount of scheduled exchanges increased from 2.76 TWh in 2021 to about 6 TWh in 2022.

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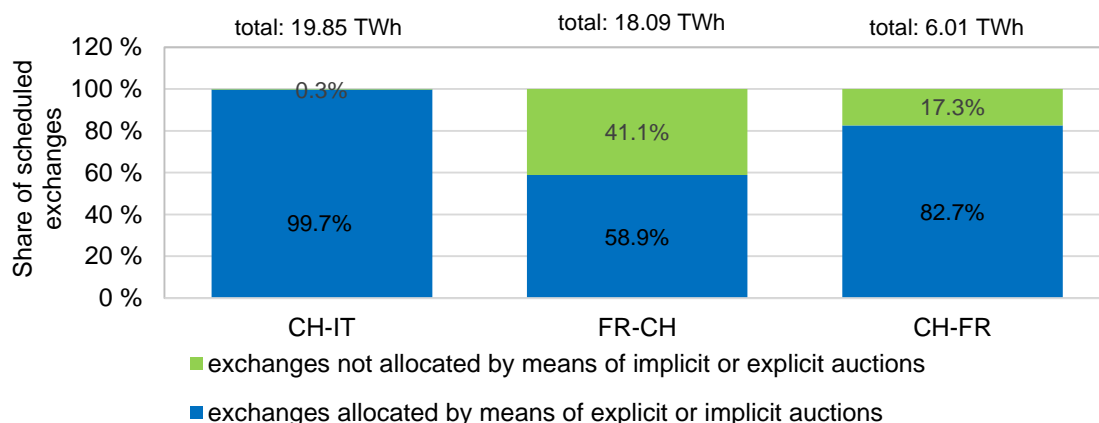
<sup>31</sup> OJ L 211, 14.8.2009, p.15, Regulation (EC) No 714/2009 of the European Parliament and of the Council on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003. Point 2.1 of Annex I of Regulation (EC) No 714/2009 stipulates that 'capacity shall be allocated only by means of explicit (capacity) or implicit (capacity and energy) auctions'.

<sup>32</sup> In winter, the LTC capacity a maximum of 2015 MW, while in summer the LTC capacity a maximum of 1857 MW.

<sup>33</sup> In winter, the LTC capacity a maximum of 325 MW and changed from 9 July 2022 to 125 MW, while in summer, the LTC capacity a maximum of 325 MW and changed from 9 July 2022 to 125 MW.

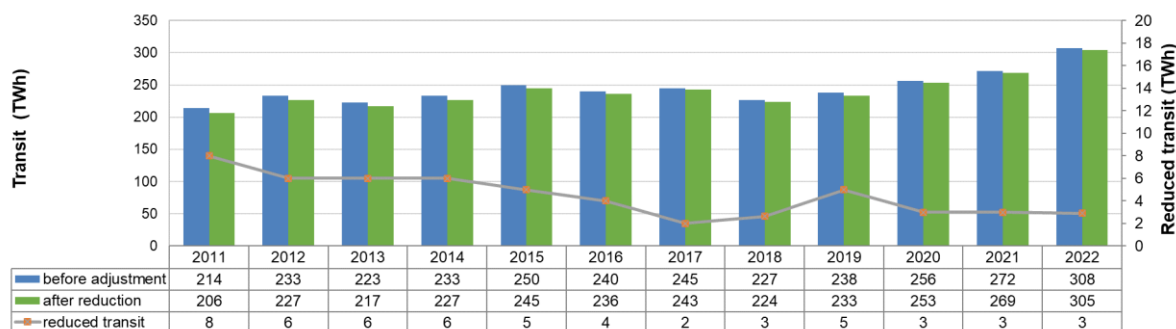
<sup>34</sup> CH-IT (from 0.6% to 0.3%), FR-CH (from 54.4% to 41.1%), CH-FR (from 24.9% to 17.3%).

Figure 6: Shares of scheduled exchanges according to the manner of their allocation for the three borders affected by reduced transits in 2022



(64) Figure 7 provides a comparison of transits before and after reduction in the period between 2011 and 2022. ACER notes that in 2022, the amount of transits before reduction reached 308 TWh and the amount of transit after reduction reached 305 TWh, which are the highest transit volumes observed since the first implementation of the ITC mechanism in 2011.

Figure 7: Amounts of transits before and after reduction between 2011 and 2022 (all values are rounded)



### 5.2.2. Compensation for transmission losses

(65) 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:

- 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.



### 5.2.2.1. Volume of losses

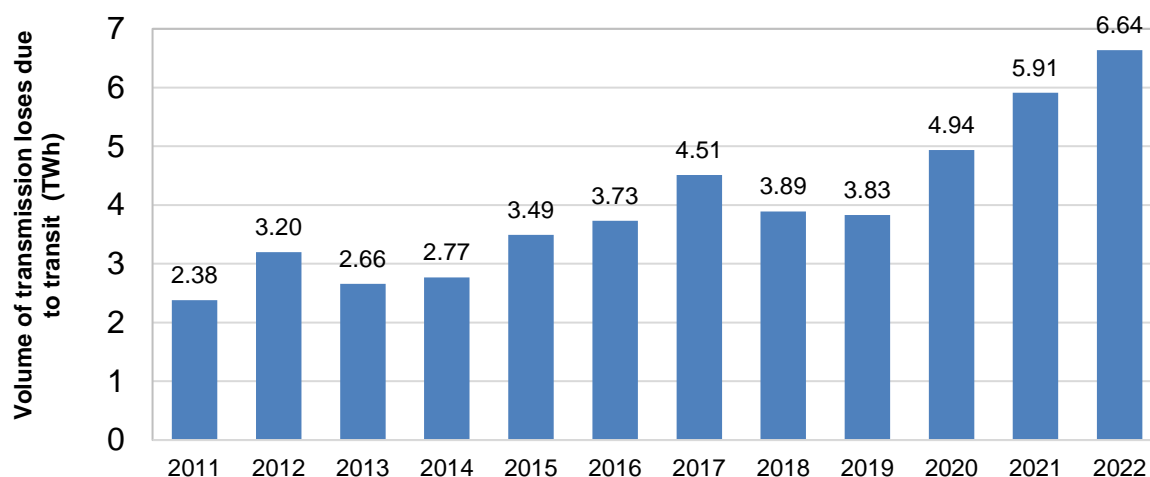
- (66) ENTSO-E sets out the detailed method for the calculation of the volume of losses in the ITC Agreement.
- (67) The Regulation also requires ENTSO-E to publish the calculation of the volume of losses and its method. ACER notes that, on 15 November 2023, ENTSO-E published the calculation method and the results for 2022<sup>35</sup>.
- (68) For each ITC party, Table 6 in 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 2021 and 2022. Further on, the evolution of the overall volume of transmission losses due to transits is presented in Figure 8.
- (69) ACER notes that for the third time in a row, the volume of transmission losses due to transits increased significantly (i.e. by 12.4%) from 5.91 TWh in 2021 up to 6.64 TWh in 2022. Compared to its amount in 2019 (i.e. 3.89 TWh), the volume of transmission losses increased overall by 73%.
- (70) This 12.4% increase of the amount of losses due to transits compared to last year happened in parallel to a 70% increase of the volume-weighted average value of losses, so finally, the losses component of the ITC fund in 2022 increased by 91% and reached its highest ever value of 504.9 million EUR.
- (71) In its previous monitoring report on the implementation of the ITC mechanism and in the assessment provided in Sections 1–3 of ACER’s Recommendation No 01/2023 on the Treatment of Losses for the Purpose of the ITC Mechanism<sup>36</sup>, ACER identified some shortcomings in the implementation of the ITC mechanism regarding the use of snapshots for calculating the volume of losses and provided recommendations to overcome them.
- (72) According to ACER’s Recommendation No 01/2023, as soon as possible, ideally for the implementation of the ITC mechanism in 2023, but not later than for the implementation of the ITC mechanism in 2024, it is recommended that ENTSO-E and TSOs 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, aiming - as swiftly as possible – ideally at an hourly resolution.

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<sup>35</sup> ENTSO-E ITC Transit Losses Data Report 2022, [https://eepublicdownloads.azureedge.net/clean-documents/mc-documents/ITC\\_Transit\\_Losses\\_Data/entso-e\\_ITC\\_Transit\\_Losses\\_Data\\_report\\_2022.pdf](https://eepublicdownloads.azureedge.net/clean-documents/mc-documents/ITC_Transit_Losses_Data/entso-e_ITC_Transit_Losses_Data_report_2022.pdf)

<sup>36</sup> [https://www.acer.europa.eu/sites/default/files/documents/Recommendations/ACER\\_Recommendation\\_01\\_2023\\_on\\_the\\_Treatment\\_of\\_Losses\\_for\\_the\\_Purpose\\_of\\_the\\_ITC\\_Mechanism.pdf](https://www.acer.europa.eu/sites/default/files/documents/Recommendations/ACER_Recommendation_01_2023_on_the_Treatment_of_Losses_for_the_Purpose_of_the_ITC_Mechanism.pdf)

Figure 8: Volume of transmission losses due to transits between 2011 and 2022



### 5.2.2.2. Values of losses<sup>37</sup>

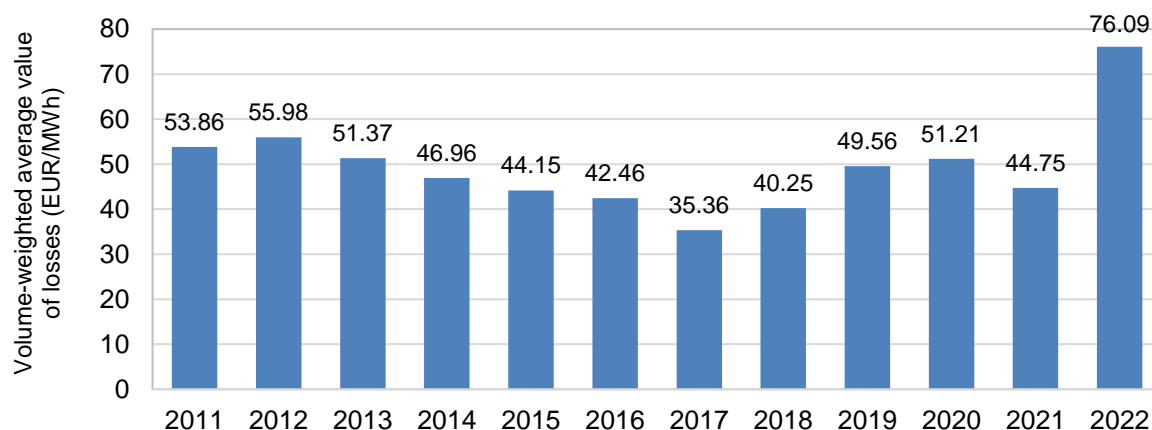
- (73) Pursuant to point 4 of Annex Part A of the Regulation, the value of losses incurred by a national transmission system as a result of the cross-border flows of electricity shall be calculated on the same basis as the one approved by the regulatory authority in respect of all losses on the national transmission system. ACER shall 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.
- (74) In its previous ITC monitoring reports ACER already described that different prices for different energy products in different markets and from auctions and bilateral contracts result in a broad range of values of losses for the EU ITC Parties<sup>38</sup>. The summary of the losses values used for the purpose of the implementation of the ITC mechanism between 2011 and 2022 is provided in Table 8.
- (75) Figure 9 presents average values of losses, weighted by their volume, for all ITC Parties between 2011 and 2022. ACER notes that in line with its previous expectations due to the unprecedented heights of the electricity wholesale prices in 2021 with significant volatility within the year, the value of losses indeed significantly increased for the 2022 ITC mechanism. The volume-weighted average value of losses of all ITC parties increased in 2022 by 70% (or by 31.34 EUR/MWh) up to 76.09 EUR/MWh compared to 2021, when the value was 44.75 EUR/MWh<sup>39</sup>. This huge increase also means that the volume-weighted average value of losses is more than twice as high than the lowest volume-weighted average value of 35.36 EUR/MWh, which was recorded in 2017.

<sup>37</sup>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).

<sup>38</sup> e.g. ACER Report on the implementation of the ITC mechanism in 2020, p. 14-16.

<sup>39</sup> ACER also notes that the straight average value is even higher, amounting up to 87.31 EUR/MWh in 2022 compared to 46.85 EUR/MWh in 2021.

Figure 9: Volume-weighted average value of losses for all ITC Parties between 2011 and 2022



- (76) Table 1 and Figure 10 provide an overview of the values of losses used for the ITC mechanism in the period between 2017 and 2022 differentiated between EU and non-EU ITC Parties. ACER notes that in 2022, the weighted average value of losses significantly increased for both the EU ITC Parties and the non-EU ITC Parties compared to 2021 (i.e. 44% increase for EU ITC Parties and 131% increase for the non-EU ITC Parties). While the weighted average value of losses had been in each year since 2011 slightly higher for the non-EU ITC Parties compared to the EU ITC Parties, in 2022 the difference became huge (i.e. 66.13 for EU ITC Parties vs. 128.72 for non-EU ITC Parties), resulting in almost twice as high value for the non-EU ITC Parties compared to the EU ITC Parties.
- (77) However, when comparing the simple average value of losses for the EU-ITC and a non-EU ITC Parties, the difference is significantly smaller (i.e. 82.45 for EU ITC Parties and 99.47 for non-EU ITC Parties). This finding is explained by the high impact of two non-EU ITC Parties' (i.e. GB and CH), transit on losses volume<sup>40</sup> with high corresponding values of losses (i.e. 170.85 EUR/MWh and 138.42 EUR/MWh).
- (78) ACER notes that the difference between the minimum and the maximum values of the losses in 2022 significantly increased both among the EU ITC Parties and among the non-EU ITC Parties, showing a much greater volatility of the value of losses across the countries than ever before. The highest losses value in 2022 was applied for Greece (188.5 EUR/MWh) and the lowest for Finland (36.48 EUR/MWh).

Table 1: Comparison of losses values in the EU and the non-EU ITC Parties between 2017 and 2022<sup>41</sup>

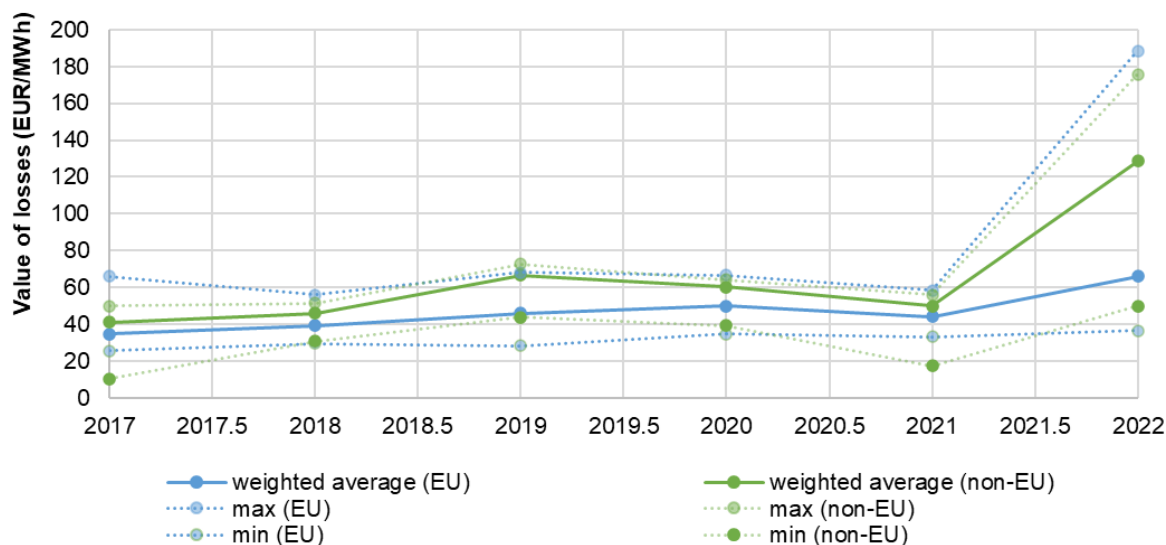
	Average value weighted by the volume of losses (EUR/MWh)	Average value weighted by the volume of losses (EUR/MWh)	Maximum value (EUR/MWh)	Maximum value (EUR/MWh)	Minimum value (EUR/MWh)	Minimum value (EUR/MWh)
	EU ITC Parties	non-EU ITC Parties	EU ITC Parties	non-EU ITC Parties	EU ITC Parties	non-EU ITC Parties
<b>2017</b>	34.67	41.08	66.08 (GB)	50 (MK)	25.48 (LU)	10.35 (AL)
<b>2018</b>	39.28	45.95	56.13 (IT)	51.32 (BA)	29.62 (SE)	30.76 (NO)

<sup>40</sup> The impact of transit on losses volume for GB and CH is over 70% of the absolute value of the total impact of transit on losses volume among the non-EU ITC Parties.

<sup>41</sup> 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.

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)

Figure 10: Evolution of the value of losses (average weighted by the volume of losses, minimum and maximum values) between 2017 and 2022



- (79) Losses values of individual ITC Parties in each year are shown in Table 8, while Figure 11 shows the value of losses in each ITC Party in 2022 and the relative change compared to 2021. ACER notes that only three countries (BE, NL, AL) provided the same or marginally lower value of losses in 2022 compared to 2021, while the remaining 32 ITC Parties all reported increased values. Out of them, in case of five ITC Parties (i.e. GR, NO, GB, IT, MK) the value of losses in 2022 was more than three times as high as in 2021.
- (80) The abovementioned significant increase of the value of losses in the vast majority of the ITC Parties in 2022 compared to the previous year is largely explained by unprecedented heights of the electricity wholesale prices in 2021<sup>42</sup> as power exchange prices are the most frequently used as a basis to value the losses<sup>43</sup> and that ITC Parties, following the procedure laid down in the ITC Agreement, determine and provide the value of losses for the ITC mechanism on a yearly basis, in advance, i.e. at the end of each year for the next year.

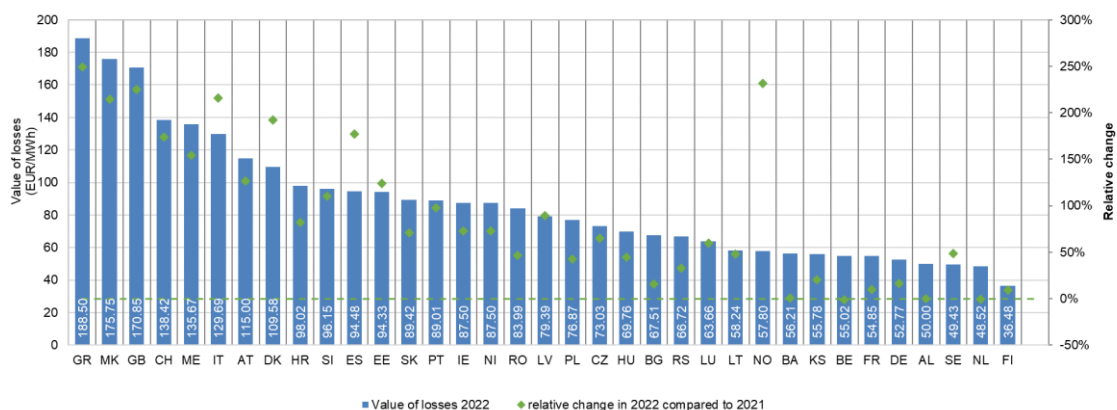
<sup>42</sup>ACER/CEER Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2020 Snapshot November 2021, p.2.

<https://acer.europa.eu/en/Electricity/Market%20monitoring/Documents/MMR%202020%20Summary%20-%20Final.pdf>

<sup>43</sup>Cf. ACER Recommendation No 01/2023, p.7.

[https://www.acer.europa.eu/sites/default/files/documents/Recommendations/ACER\\_Recommendation\\_01\\_2023\\_on\\_the\\_Treatment\\_of\\_Losses\\_for\\_the\\_Purpose\\_of\\_the\\_ITC\\_Mechanism.pdf](https://www.acer.europa.eu/sites/default/files/documents/Recommendations/ACER_Recommendation_01_2023_on_the_Treatment_of_Losses_for_the_Purpose_of_the_ITC_Mechanism.pdf)

Figure 11: value of losses in each ITC Party in 2022 and the relative change compared to 2021



- (81) ACER performed a comparison between the losses' values used for the purpose of the 2022 ITC mechanism, and the "actual" value of losses, which is typically registered ex-post (i.e. using the actual costs/market prices) for the EU ITC Parties. As shown in Table 9 in the Annex, for all but three EU ITC Parties (i.e. AT, FR, IE) for which the data were available<sup>44</sup>, the actual value of losses was higher than the values used for the implementation of the 2022 ITC mechanism. On average the difference was 2-fold, but for three ITC Parties about 3-fold (i.e. BE, LV, LT) and for one ITC Party almost 5-fold (i.e. NL).
- (82) 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 a 50% increase in the overall ITC compensation for losses in 2022 (i.e. 762 billion EUR instead of 504.9 billion EUR).
- (83) Previously, ACER found that the values used for the ITC mechanism appear to correlate with the evolution of the actual values with a one-year lag, i.e. the values used for the ITC mechanism tend to increase in the following year if the actual values for losses of the previous year increased, and vice-versa<sup>45</sup>. This finding suggests further increases of the ITC Fund in 2023, assuming no radical reduction in the volumes of transit losses.
- (84) ACER's latest detailed review of the criteria for the valuation of losses at national level based on the information on the criteria for valuing losses received from all NRAs of the EU ITC Parties at that time, as well as from the NRAs of Norway is provided in section 3 of ACER's Recommendation No 01/2023 on the Treatment of Losses for the Purpose of the ITC Mechanism<sup>46</sup>. The country specific information extracted from the Recommendation is provided in Table 10 in Annex 1 to this Report. In its assessment, ACER identified some shortcomings in the implementation of the ITC mechanism regarding the treatment of losses and provided recommendations on how and when/how often the values of losses should be determined for the purpose of the ITC mechanism.
- (85) In this regard, ACER addressed the following recommendations to ENTSO-E, TSOs and NRAs:
  - a. From the implementation of the ITC mechanism in 2023 or, in case such timeline is not feasible for duly justified reasons, from implementation of the ITC mechanism in 2024, ENTSO-E and TSOs should amend the ITC agreement by applying an ex-post

<sup>44</sup> For Slovakia no actual losses cost data was provided by the NRA.

<sup>45</sup> Cf. ACER ITC monitoring report 2019, p. 12,

[https://www.acer.europa.eu/Official\\_documents/Acts\\_of\\_the\\_Agency/Publication/ITC%20Monitoring%20Report%202019.pdf](https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ITC%20Monitoring%20Report%202019.pdf)

<sup>46</sup>

[https://www.acer.europa.eu/sites/default/files/documents/Recommendations/ACER\\_Recommendation\\_01\\_2023\\_on\\_the\\_Treatment\\_of\\_Losses\\_for\\_the\\_Purpose\\_of\\_the\\_ITC\\_Mechanism.pdf](https://www.acer.europa.eu/sites/default/files/documents/Recommendations/ACER_Recommendation_01_2023_on_the_Treatment_of_Losses_for_the_Purpose_of_the_ITC_Mechanism.pdf)



reconciliation of the costs of losses due to transits, to reflect the costs actually incurred and audited/approved by NRAs, where relevant, in each ITC Party country<sup>47</sup>.

- b. At least until an ex-post reconciliation of the costs of losses due to transits is applied in the ITC mechanism, where procurement of energy to cover losses is done from the power exchange markets and the valuation of losses (including for national purposes) is market based, TSOs should determine the relevant components of the value of losses for the purpose of the ITC mechanism by considering liquid forward-market prices instead of historical prices<sup>48</sup>.
- (86) On 11 April 2024, ENTSO-E informed ACER that ENTSO-E's Market Committee approved for years 2023 onwards a new guidance document on audit procedure and an accompanying methodology (so called "Case (ii) methodology") for identifying and estimating the ITC value for countries which do not fall under Point 4.4, Paragraph 1 of Commission Regulation 838/2010 (i.e. where the value of losses incurred by a national transmission system as a result of the cross-border flow of electricity is NOT calculated on the same basis as the one approved by the regulatory authority in respect of all losses on the national transmission systems).
- (87) The assessment of the "Guidance document on Audits" and the accompanying methodology is not provided in this Report. The appropriateness and sufficiency of these additional measures, still remain subject to future ACER assessment, also in light of their first application.

### 5.2.3. Compensation for infrastructure availability for cross-border flows

- (88) 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 summarized 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%.
- (89) 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.
- (90) Table 7 in the Annex provides a summary of the annual amount each ITC Party received in 2022 based on their transit factors and load factors.

<sup>47</sup> The ITC settlement would therefore consist of an initial process, in which the ex-ante set values of losses are provided (e.g. for the purpose of estimating the ITC economic impacts and their implications on national tariffs), and a final settlement (ex-post reconciliation of the values of losses, subject to ENTSO-E internal audits) as described above.

<sup>48</sup> At the time of calculation, the most recent forward price should be taken into account to the extent feasible. In absence of a liquid forward-market, price evolution in non-liquid markets complemented with prices of long-term transmission rights between the nonliquid market and a liquid market may be considered.

## 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.

Table 2: Overview of compensations and contributions to the ITC fund in 2022

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	0.753	0.476	0.000	0.000	2.721	0.510	-2.002
Austria	26.451	6.910	0.000	0.000	16.409	3.078	13.873
Belgium	10.539	4.777	0.000	0.000	11.840	2.221	1.254
Bosnia	1.599	1.277	0.000	0.000	4.158	0.780	-2.062
Bulgaria	1.427	0.384	0.619	0.619	12.810	2.403	-14.639
Croatia	7.930	2.302	0.000	0.000	7.147	1.341	1.744
Czech Republic	23.146	5.578	0.000	0.000	18.565	3.482	6.676
Denmark	35.008	5.205	0.000	0.000	11.287	2.117	26.809
Estonia	19.751	2.328	0.000	0.000	1.900	0.356	19.821
Finland	16.071	2.249	2.178	2.178	12.483	2.341	-0.860
France	54.821	6.969	0.000	0.000	41.500	7.785	12.505
Germany	66.966	12.310	0.000	0.000	56.964	10.685	11.627
Great Britain	54.273	1.748	0.000	0.000	28.983	5.437	21.602
Greece	5.438	0.669	0.279	0.279	6.275	1.177	-1.903
Hungary	4.933	3.061	0.116	0.116	12.011	2.253	-6.502
Ireland	0.359	0.062	0.000	0.000	2.997	0.562	-3.139
Italy	2.169	0.736	0.000	0.000	57.223	10.734	-65.052
Kosovo	1.049	0.876	0.000	0.000	1.995	0.374	-0.444
Latvia	3.046	0.983	0.263	0.263	2.659	0.499	0.345
Lithuania	5.095	1.615	0.463	0.463	7.854	1.473	-3.543
Luxembourg	0.102	0.030	0.000	0.000	4.943	0.927	-5.738
Montenegro	3.024	2.313	0.000	0.000	1.413	0.265	3.659
Netherlands	13.532	4.452	0.000	0.000	16.056	3.012	-1.084
North Macedonia	2.400	0.944	0.000	0.000	2.090	0.392	0.862
Northern Ireland	0.852	0.236	0.000	0.000	2.110	0.396	-1.418
Norway	-7.302	2.140	0.000	0.000	28.769	5.396	-39.328
Poland	33.643	3.972	0.648	0.648	4.690	0.880	30.749
Portugal	1.300	0.322	0.000	0.000	16.508	3.097	-17.983
Romania	-0.450	1.025	0.479	0.479	4.645	0.871	-5.899
Serbia	4.459	1.709	0.000	0.000	3.838	0.720	1.611
Slovakia	9.500	6.067	0.279	0.279	2.912	0.546	11.550
Slovenia	9.000	3.250	0.000	0.000	3.230	0.606	8.414
Spain	15.788	1.714	1.199	1.199	26.548	4.980	-16.423
Sweden	21.914	2.947	0.000	0.000	43.361	8.134	-26.633
Switzerland	56.275	8.362	0.000	0.000	19.441	3.647	41.550
<b>TOTAL</b>	<b>504.861</b>	<b>100.000</b>	<b>6.523</b>	<b>6.523</b>	<b>498.338</b>	<b>93.477</b>	<b>0.000</b>

Table 3: Final net positions of ITC Parties between 2011 and 2022

ITC party	Final net position (million EUR)											
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Albania	-2.176	-2.320	-1.518	-1.607	-1.364	-1.239	-1.878	-1.624	-1.271	-1.534	-2.273	-2.002
Austria	11.144	17.915	11.263	6.223	7.136	5.526	9.817	7.650	16.176	12.584	4.531	13.873
Belgium	2.566	-3.077	-1.604	-5.964	-9.933	1.989	0.592	-5.768	3.030	3.507	2.856	1.254
Bosnia	3.398	3.444	1.018	0.897	2.329	0.375	1.132	0.488	-0.148	-0.696	-1.177	-2.062
Bulgaria	-4.265	-2.815	-0.713	0.002	-2.691	0.907	0.137	-2.333	-1.500	-1.062	-5.843	-14.639
Croatia	2.147	0.110	5.264	2.359	0.974	2.556	-0.472	4.604	-0.294	-0.767	2.226	1.744
Czech Republic	-5.702	-4.941	-4.544	0.841	7.842	6.447	5.946	8.785	12.291	20.456	7.975	6.676
Denmark	4.600	13.108	12.675	11.154	8.674	5.411	9.356	7.640	9.207	9.878	14.204	26.809
Estonia	-0.532	1.389	1.853	5.471	8.378	3.854	2.813	3.701	4.759	3.764	7.435	19.821
Finland	0.769	-9.125	-5.713	-1.262	3.545	-2.886	-8.054	-5.116	-4.953	2.981	4.693	-0.860
France	-25.685	-22.123	-19.032	-29.079	-27.331	2.070	-6.880	-20.893	-21.004	-19.808	-15.255	12.505
Germany	20.974	26.786	13.207	0.912	-6.101	-12.475	-2.156	-8.435	-9.168	6.791	29.786	11.627
Great Britain	-6.794	-11.534	-12.706	-13.274	-14.063	-10.028	-10.344	-7.506	-8.875	-12.489	-10.209	21.602
Greece	0.317	4.693	0.612	-3.634	-3.065	-4.637	-0.686	0.278	-4.676	-6.323	-0.948	-1.903
Hungary	1.765	2.507	-4.412	-3.910	-3.938	-4.034	-2.745	-5.058	-2.753	-3.366	-4.212	-6.502
Ireland	-0.661	-0.449	-1.217	-0.934	-0.932	-1.167	-1.413	-1.410	-1.818	-1.681	-2.518	-3.139
Italy	-30.544	-33.931	-29.760	-24.035	-29.726	-25.559	-24.901	-25.849	-22.122	-27.355	-36.336	-65.052
Kosovo	-	-	-	-	-	0.225	0.069	1.036	0.499	-0.028	0.169	-0.444
Latvia	0.764	3.185	3.676	2.995	3.548	3.126	2.798	2.966	2.383	0.100	-1.228	0.345
Lithuania	-4.969	-5.447	-4.359	-3.719	-3.371	1.454	-0.397	-1.858	-2.642	-0.124	-0.169	-3.543
Luxembourg	-2.846	-3.264	-2.849	-2.309	-2.551	-2.905	-2.783	-2.405	-2.769	-3.398	-3.418	-5.738
Montenegro	0.425	0.784	1.032	2.127	0.672	0.504	0.419	0.791	2.128	4.270	2.484	3.659
Netherlands	-0.184	-4.540	-1.799	4.559	11.181	4.526	6.230	10.030	7.959	10.576	9.237	-1.084
North Macedonia	-0.833	-1.031	-0.695	0.395	0.803	1.096	0.218	0.349	0.571	-0.192	-0.652	0.862
Northern Ireland	-0.305	-0.896	-0.818	-0.664	-0.619	-0.539	-0.729	-0.315	-0.587	-0.718	-0.109	-1.418
Norway	-10.870	-13.643	-9.100	-6.274	-5.813	-12.794	-11.978	-10.358	-10.378	-20.503	-18.586	-39.328
Poland	2.635	5.013	2.853	10.106	15.532	8.342	5.775	3.381	5.072	8.226	14.258	30.749
Portugal	-2.692	-3.281	-2.102	-0.292	0.255	-2.894	-3.476	-2.331	-6.321	-9.330	-9.354	-17.983
Romania	-2.282	-3.329	-1.737	-4.257	-4.352	-3.725	-3.762	-1.303	-4.345	-2.331	-3.812	-5.899
Serbia	3.297	2.015	1.461	2.012	3.740	2.221	2.473	3.785	1.100	1.645	2.158	1.611
Slovakia	6.994	11.415	6.985	7.722	7.737	5.298	6.573	4.218	8.035	11.643	9.545	11.550
Slovenia	4.130	3.808	4.023	4.624	5.919	5.186	6.612	1.360	5.597	2.164	4.255	8.414
Spain	-1.064	-5.317	-0.191	0.989	1.195	4.972	1.249	10.312	8.820	4.058	-3.847	-16.423
Sweden	14.311	10.400	16.074	19.795	3.996	4.007	4.391	10.438	-7.205	-7.960	-5.565	-26.633
Switzerland	22.172	24.491	22.877	18.030	22.396	14.789	16.056	20.752	25.201	17.022	9.699	41.550
<b>TOTAL</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

Table 4: Derivation of contributions to the ITC Fund in 2022

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	1,522,474	601,467	0.000	0.510	0.000	2.721
Austria	11,295,718	1,514,057	0.000	3.078	0.000	16.409
Belgium	1,487,118	7,755,970	0.000	2.221	0.000	11.840
Bosnia	109,039	3,136,853	0.000	0.780	0.000	4.158
Bulgaria	3,497	9,996,222	0.619	2.403	0.619	12.810
Croatia	5,428,239	151,152	0.000	1.341	0.000	7.147
Czech Republic	98,496	14,394,129	0.000	3.482	0.000	18.565
Denmark	5,285,695	3,525,313	0.000	2.117	0.000	11.287
Estonia	1,330,775	152,741	0.000	0.356	0.000	1.900
Finland	9,492,888	251,577	2.178	2.341	2.178	12.483
France	24,202,828	8,193,828	0.000	7.785	0.000	41.500
Germany	8,340,538	36,127,689	0.000	10.685	0.000	56.964
Great Britain	9,584,301	13,040,616	0.000	5.437	0.000	28.983
Greece	3,124,115	1,774,756	0.279	1.177	0.279	6.275
Hungary	9,294,168	82,330	0.116	2.253	0.116	12.011
Ireland	1,292,838	1,047,001	0.000	0.562	0.000	2.997
Italy	44,452,995	217,083	0.000	10.734	0.000	57.223
Kosovo	901,330	655,908	0.000	0.374	0.000	1.995
Latvia	1,808,610	266,830	0.263	0.499	0.263	2.659
Lithuania	6,130,816	487	0.463	1.473	0.463	7.854
Luxembourg	3,858,422	0	0.000	0.927	0.000	4.943
Montenegro	484,255	618,644	0.000	0.265	0.000	1.413
Netherlands	4,129,304	8,404,562	0.000	3.012	0.000	16.056
North Macedonia	1,526,199	105,166	0.000	0.392	0.000	2.090
Northern Ireland	257,444	1,389,704	0.000	0.396	0.000	2.110
Norway	5,368,978	17,089,250	0.000	5.396	0.000	28.769
Poland	1,072,722	2,588,831	0.648	0.880	0.648	4.690
Portugal	11,071,273	1,815,711	0.000	3.097	0.000	16.508
Romania	2,423,929	1,202,163	0.479	0.871	0.479	4.645
Serbia	2,900,080	95,971	0.000	0.720	0.000	3.838
Slovakia	1,999,063	274,308	0.279	0.546	0.279	2.912
Slovenia	1,983,146	538,430	0.000	0.606	0.000	3.230
Spain	1,358,675	19,365,709	1.199	4.980	1.199	26.548
Sweden	141,698	33,707,215	0.000	8.134	0.000	43.361
Switzerland	9,554,543	5,621,826	0.000	3.647	0.000	19.441
<b>TOTAL</b>	<b>193,316,211</b>	<b>195,703,500</b>	<b>6.523</b>	<b>93.477</b>	<b>6.523</b>	<b>498.338</b>
			<b>100.000</b>		<b>504.861</b>	

Table 5: Reduction in transits in 2022

ITC party	Transit before adjustment (MWh)	Reduction due to non-auctioned interconnection capacity (MWh)	Transit after reduction (MWh)
Albania	1,521,060	0	1,521,060
Austria	19,274,678	0	19,274,678
Belgium	14,896,912	0	14,896,912
Bosnia	3,719,441	0	3,719,441
Bulgaria	1,459,750	0	1,459,750
Croatia	6,490,582	0	6,490,582
Czech Republic	15,859,051	0	15,859,051
Denmark	13,433,817	0	13,433,817
Estonia	5,717,531	0	5,717,531
Finland	7,799,301	0	7,799,301
France	27,680,068	1,924,301	25,755,767
Germany	40,616,700	0	40,616,700
Great Britain	6,814,782	0	6,814,782
Greece	2,512,342	0	2,512,342
Hungary	9,349,094	0	9,349,094
Ireland	249,656	0	249,656
Italy	2,931,291	70	2,931,221
Kosovo	2,474,831	0	2,474,831
Latvia	2,708,857	0	2,708,857
Lithuania	4,473,388	0	4,473,388
Luxembourg	115,512	0	115,512
Montenegro	4,867,905	0	4,867,905
Netherlands	14,405,447	0	14,405,447
North Macedonia	2,696,875	0	2,696,875
Northern Ireland	841,842	0	841,842
Norway	7,602,962	0	7,602,962
Poland	13,569,048	0	13,569,048
Portugal	1,243,910	0	1,243,910
Romania	3,672,984	0	3,672,984
Serbia	5,546,632	0	5,546,632
Slovakia	14,680,570	0	14,680,570
Slovenia	8,213,525	0	8,213,525
Spain	6,603,151	0	6,603,151
Sweden	10,287,396	0	10,287,396
Switzerland	23,140,580	898,290	22,242,290
<b>TOTAL</b>	<b>307,471,469</b>	<b>2,822,660</b>	<b>304,648,809</b>

Table 6: Derivation of compensation for transmission losses in 2021 and 2022

ITC party	2021			2022		
	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	7,465	50.00	0.373	15,066	50.00	0.753
Austria	170,110	50.74	8.631	230,008	115.00	26.451
Belgium	121,871	55.76	6.796	191,556	55.02	10.539
Bosnia	32,942	55.93	1.842	28,444	56.21	1.599
Bulgaria	23,185	58.40	1.354	21,134	67.51	1.427
Croatia	71,570	53.86	3.855	80,901	98.02	7.930
Czech Republic	292,135	44.30	12.942	316,932	73.03	23.146
Denmark	432,398	37.48	16.206	319,473	109.58	35.008
Estonia	174,203	42.12	7.337	209,377	94.33	19.751
Finland	463,802	33.46	15.519	440,546	36.48	16.071
France	580,187	50.01	29.015	999,473	54.85	54.821
Germany	1,144,919	45.27	51.831	1,269,018	52.77	66.966
Great Britain	219,435	52.51	11.523	317,663	170.85	54.273
Greece	39,853	54.00	2.152	28,849	188.50	5.438
Hungary	60,711	48.32	2.934	70,707	69.76	4.933
Ireland	1,664	50.61	0.084	4,100	87.50	0.359
Italy	34,762	41.07	1.428	16,723	129.69	2.169
Kosovo	21,461	46.42	0.996	18,810	55.78	1.049
Latvia	32,636	41.90	1.367	38,368	79.39	3.046
Lithuania	77,275	39.38	3.043	87,490	58.24	5.095
Luxembourg	253	39.81	0.010	1,604	63.66	0.102
Montenegro	20,171	53.39	1.077	22,287	135.67	3.024
Netherlands	324,121	48.74	15.798	278,887	48.52	13.532
North Macedonia	14,486	55.90	0.810	13,655	175.75	2.400
Northern Ireland	14,502	50.61	0.734	9,738	87.50	0.852
Norway	35,137	17.43	0.612	-126,336	57.80	-7.302
Poland	330,592	53.94	17.832	437,663	76.87	33.643
Portugal	3,415	45.03	0.154	14,607	89.01	1.300
Romania	-6,711	57.26	-0.384	-5,355	83.99	-0.450
Serbia	63,838	50.20	3.205	66,832	66.72	4.459
Slovakia	115,878	52.29	6.059	106,247	89.42	9.500
Slovenia	64,434	45.80	2.951	93,605	96.15	9.000
Spain	202,938	34.06	6.912	167,105	94.48	15.788
Sweden	410,940	33.21	13.647	443,342	49.43	21.914
Switzerland	313,065	50.58	15.835	406,553	138.42	56.275
<b>TOTAL</b>	<b>5,909,643</b>	<b>-</b>	<b>264.479</b>	<b>6,635,072</b>	<b>-</b>	<b>504.861</b>



Table 7: Derivation of compensation for cross-border infrastructure in 2022

ITC Party	Transit (MWh)	Load* (GWh)	Transit Factor based compensation (million EUR)	Load Factor based compensation (million EUR)	Total Infrastructure compensation (million EUR)
Albania	1,521,060	6,996	0.374	0.102	0.476
Austria	19,274,678	44,863	4.745	2.165	6.910
Belgium	14,896,912	59,879	3.667	1.109	4.777
Bosnia	3,719,441	10,578	0.916	0.362	1.277
Bulgaria	1,459,750	30,390	0.359	0.025	0.384
Croatia	6,490,582	15,857	1.598	0.705	2.302
Czech Republic	15,859,051	40,296	3.904	1.674	5.578
Denmark	13,433,817	22,108	3.307	1.898	5.205
Estonia	5,717,531	7,560	1.408	0.920	2.328
Finland	7,799,301	61,259	1.920	0.329	2.249
France	25,755,767	368,746	6.341	0.628	6.969
Germany	40,616,700	226,186	9.999	2.311	12.310
Great Britain	6,814,782	238,368	1.678	0.071	1.748
Greece	2,512,342	44,542	0.619	0.050	0.669
Hungary	9,349,094	33,654	2.302	0.760	3.061
Ireland	249,656	30,800	0.061	0.001	0.062
Italy	2,931,221	223,288	0.722	0.014	0.736
Kosovo	2,474,831	6,098	0.609	0.267	0.876
Latvia	2,708,857	5,961	0.667	0.316	0.983
Lithuania	4,473,388	10,089	1.101	0.514	1.615
Luxembourg	115,512	3,764	0.028	0.001	0.030
Montenegro	4,867,905	3,075	1.198	1.115	2.313
Netherlands	14,405,447	71,235	3.546	0.906	4.452
North Macedonia	2,696,875	7,018	0.664	0.280	0.944
Northern Ireland	841,842	8,300	0.207	0.029	0.236
Norway	7,602,962	72,913	1.872	0.268	2.140
Poland	13,569,048	95,449	3.340	0.631	3.972
Portugal	1,243,910	35,939	0.306	0.016	0.322
Romania	3,672,984	37,921	0.904	0.121	1.025
Serbia	5,546,632	27,891	1.365	0.344	1.709
Slovakia	14,680,570	18,162	3.614	2.452	6.067
Slovenia	8,213,525	12,312	2.022	1.228	3.250
Spain	6,603,151	176,893	1.626	0.089	1.714
Sweden	10,287,396	85,263	2.533	0.414	2.947
Switzerland	22,242,290	41,807	5.476	2.887	8.362
<b>TOTAL</b>	<b>304,648,809</b>	<b>2,185,460</b>	<b>75.000</b>	<b>25.000</b>	<b>100.000</b>

\*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 8: Value of losses used for the ITC mechanism between 2011 and 2022 and relative change compared to previous year**

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
ITC Party	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Value	Change compared to 2021
AL	3.00	3.00	7.00	7.00	10.35	10.35	10.35	50.00	50.00	50.00	50.00	50.00	0%
AT	58.97	58.68	56.07	47.96	37.57	33.64	27.88	30.18	47.04	57.79	50.74	115.00	127%
BE	51.23	60.34	60.32	61.34	62.24	44.44	44.44	44.44	44.44	53.84	55.76	55.02	-1%
BA	35.89	46.63	46.63	46.63	46.63	48.60	42.30	51.32	69.78	64.22	55.93	56.21	1%
BG	47.03	47.12	50.66	51.35	15.34	34.17	38.74	55.07	56.18	56.76	58.40	67.51	16%
HR	60.00	57.89	63.38	51.80	51.51	46.07	42.21	47.67	56.69	59.02	53.86	98.02	82%
CZ	61.56	63.65	57.60	42.41	39.26	36.25	32.79	42.32	55.24	55.73	44.30	73.03	65%
DK	57.77	47.57	43.69	41.30	38.00	28.80	34.94	35.73	50.87	46.02	37.48	109.58	192%
EE	29.40	29.40	40.67	44.04	44.10	33.85	33.78	36.30	47.57	45.23	42.12	94.33	124%
FI	46.13	48.40	52.13	48.58	46.48	43.88	39.48	35.23	34.40	34.62	33.46	36.48	9%
FR	62.35	65.22	69.44	51.44	51.44	50.61	42.45	40.37	40.27	45.18	50.01	54.85	10%
DE	51.84	54.00	53.42	44.79	40.00	40.00	27.51	29.64	36.59	49.32	45.27	52.77	17%
GB	52.18	55.59	63.96	61.69	63.02	55.30	66.08	54.34	68.08	56.19	52.51	170.85	225%
GR	0.00	65.07	68.12	65.00	64.00	60.00	48.70	53.30	56.70	66.60	54.00	188.50	249%
HU	52.74	54.13	54.48	43.14	39.25	38.01	37.60	40.78	49.05	58.09	48.32	69.76	44%
IE	56.12	70.38	66.51	64.53	60.74	48.92	40.33	47.55	64.14	59.44	50.61	87.50	73%
IT	66.70	74.50	75.50	62.40	51.06	53.43	41.12	56.13	62.96	54.09	41.07	129.69	216%
KS	-	-	-	-	-	28.24	34.11	46.17	44.00	44.88	46.42	55.78	20%
LV	53.93	50.00	45.84	47.00	51.54	43.81	38.73	37.00	47.90	46.06	41.90	79.39	89%
LT	49.58	49.58	50.10	55.00	55.52	45.20	39.90	37.10	47.25	46.38	39.38	58.24	48%
LU	54.11	61.19	54.47	42.32	37.22	34.27	25.48	31.86	41.45	51.62	39.81	63.66	60%
ME	47.75	62.65	62.62	49.59	50.03	47.92	40.84	48.52	62.99	54.94	53.39	135.67	154%
NL	55.00	62.50	62.70	49.20	45.60	45.75	38.34	42.99	60.36	49.73	48.74	48.52	0%
MK	38.89	70.00	66.00	60.00	62.00	50.00	50.00	50.07	64.25	59.87	55.90	175.75	214%
NI	56.12	70.38	66.51	64.53	60.74	48.92	40.33	47.55	64.14	59.44	50.61	87.50	73%
NO	46.92	41.22	38.82	37.29	33.17	21.48	34.56	30.76	44.03	39.22	17.43	57.80	232%
PL	49.80	45.50	46.38	41.40	41.87	41.28	38.07	40.93	56.06	62.85	53.94	76.87	43%
PT	46.60	56.16	57.60	53.50	50.49	49.22	47.34	51.44	61.00	57.82	45.03	89.01	98%
RO	48.90	58.66	50.22	45.84	39.59	37.61	35.20	42.15	43.15	57.18	57.26	83.99	47%
RS	44.10	44.10	60.00	45.27	48.05	46.53	42.46	47.48	60.00	58.00	50.20	66.72	33%
SK	55.96	67.47	63.66	55.77	46.86	41.13	33.96	38.42	45.27	58.16	52.29	89.42	71%
SI	56.32	59.51	55.51	55.73	56.22	44.60	44.61	44.69	46.08	45.80	45.80	96.15	110%
ES	45.52	51.79	50.33	43.02	43.65	50.37	38.37	53.13	57.34	55.48	34.06	94.48	177%
SE	56.32	55.89	51.38	44.30	42.58	37.46	30.00	29.62	28.45	43.73	33.21	49.43	49%
CH	65.21	69.13	65.35	56.25	52.92	46.88	41.07	45.91	72.72	63.95	50.58	138.42	174%

Table 9: Country specific data on the value and valuation of losses<sup>49</sup>

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]			
	2019	2020	2021	2022		2019	2020	2021	2022
Austria	47.04	57.54	50.74	69.7	yes	47.04	57.54	50.74	69.7
Belgium	44.44	53.84	55.76	48.75	yes <sup>50</sup>	40.75	45.25	76.81	167.97
Bulgaria	56.18	56.76	58.4	67.51	no	55.61	48.99	105.41	263.23
Croatia	56.69	59.02	53.86	70.61	yes	62.72	51.63	79.8 <sup>51</sup>	185.98
Czech Republic <sup>52</sup>	55.24	55.73	44.3	75.16 <sup>53</sup>	yes	48.9	47.02	78.44	163.82 <sup>54</sup>
Denmark	43.74	41.04	34.94	104.06	yes	34	20	79 <sup>55</sup>	237.81
Estonia	36.002	36.002	36.002	78.98	yes	48.69	35.04	93.21	206.84
Finland	no data	no data	no data	no data	no data	45.95	40.205	49.473	60.32
France	40.27	42.17	50.01	47.52	yes	37.94	45.28	49.81 <sup>56</sup>	44.60
Germany	36.59	49.32	45.28	52.77	yes <sup>57</sup>	34.28	46.85	44.59	58.51 <sup>58</sup>
Greece	no value used <sup>59</sup>				no value used	65.69	48.22	128.22	285.82 <sup>60</sup>
Hungary <sup>61</sup>	59.37	57.31	51.24	65.78	yes	45.27	52.73	58.54	119.18
Ireland	no value used				no value used	64.14	59.44	50.61	87.50
Italy	no value used				no value used	54.12	41.13	129.25	314.51
Latvia	44.43	31.28	36.07	79.18	yes	47.58	33.1	96.56	236.92
Lithuania	47.25	46.38	39.38	58.24	yes	48.08	33.43	95.34	201.73
Luxembourg	41.45	51.62	39.81	63.66	yes	42.73	54.84	43.76	65.24
the Netherlands	54.69	56.22	56.62	51.33	yes <sup>62</sup>	53.87	41.29	86.19	233.09
Norway <sup>63</sup>	38.97	36.56	20.66	41.98	yes	40.11	10.74	65.94	144.39
Poland <sup>64</sup>	56.06	62.85	53.94	76.87	no	58.86	55.95	69.74	122.47
Portugal	no value used				No value used	48.29	34.74	113.38	167.68

<sup>49</sup> 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: [https://www.acer.europa.eu/sites/default/files/documents/Recommendations/ACER\\_Recommendation\\_01\\_2023\\_on\\_the\\_Treatment\\_of\\_Losses\\_for\\_the\\_Purpose\\_of\\_the\\_ITC\\_Mechanism.pdf](https://www.acer.europa.eu/sites/default/files/documents/Recommendations/ACER_Recommendation_01_2023_on_the_Treatment_of_Losses_for_the_Purpose_of_the_ITC_Mechanism.pdf)

<sup>50</sup> 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.

<sup>51</sup> HR: Yearly average exchange rates between HRK and EUR: 7.41 in 2019, 7.53 in 2020 and 7.52 in 2021.

<sup>52</sup> CZ: Yearly average exchange rates between CZK and EUR: 25.67 in 2019, 26.44 in 2020 and 25.65 in 2021 (for 'actual costs of procurement of losses'), 25.10 for 2019, 26.05 for 2020 and 27.00 for 2021 (for 'values used for the ITC mechanism' and 'value used for tariffs').

<sup>53</sup> CZ: using the exchange rate of 11.10.2021.

<sup>54</sup> CZ: using the exchange rate of 15.06.2023.

<sup>55</sup> DK: Yearly average exchange rates between DKK and EUR: 7.45 in 2019, 2020, 2021.

<sup>56</sup> FR: The French NRA explains this value is not definite and will be updated in 2023.

<sup>57</sup> 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.

<sup>58</sup> DE: the values include technically-related operating consumption of the TSOs but they do not include offshore losses.

<sup>59</sup> 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.

<sup>60</sup> GR: Ex-post annual average cost of losses in the wholesale market as passed on to suppliers.

<sup>61</sup> HU: Yearly average exchange rates between HUF and EUR: 315 in 2019, 335 in 2020, 375 in 2021, 391.33 in 2022.

<sup>62</sup> 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 realized costs exceeds 20%, all costs above the 20% threshold are settled.

<sup>63</sup> NO: Yearly average exchange rates between NOK and EUR: 9.8527 in 2019, 10.7207 in 2020, 10.1648 in 2021.

<sup>64</sup> PL: Yearly average exchange rates between PLN and EUR: 4.2980 in 2019, 4.4448 in 2020, 4.5674 in 2021.

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]			
	2019	2020	2021	2022		2019	2020	2021	2022
<b>Romania</b>	43.15	57.18	57.26	84.67	yes	53.71	53.14	92.03	158.15 <sup>65</sup>
<b>Slovakia<sup>66</sup></b>	45.268 7	58.157 9	52.286	89.417 3	no	information not available to the NRA			
<b>Slovenia</b>	46.08	45.8	45.8	96.15	yes	51.52	52.32	70.85	160.66
<b>Spain</b>	no value used				no value used	48.24	34.83	112.16	197.04
<b>Sweden</b>	38.3	18.3	56	98	yes	38.3	18.3	56 <sup>67</sup>	98

<sup>65</sup> RO: Yearly average exchange rates between RON and EUR: 4.7793 in 2019, 4.8694 in 2020 and 4.9481 in 2021, 4.9315 in 2022.

<sup>66</sup> SK: The NRA sets the price ex-ante (t-1), based on the average market price (volumes of losses are subject to later adjustments).

<sup>67</sup> SE: Yearly average exchange rates between SEK and EUR: 10.5892 in 2019, 10.4867 in 2020, 10.1449 in 2021.

Table 10: Country-specific information on the procurement of losses, on determination of the value of losses and on the respective basis<sup>68</sup>

	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.	<b>Power exchange market and tenders</b> <u>Calculation method: Long-term market data, short-term market data and tenders</u> 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.	<b>Power exchange market and tenders</b> <u>Long-term market data, short-term market data and tenders</u> 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.	<b>Power exchange market</b> <u>Long-term market and short-term market data</u> 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
Croatia	The TSO procures the energy on the short-term and long-term market and organizes tenders.	<b>Power exchange market and tenders</b> <u>Long-term market data, short-term market data and tenders</u> The value is usually determined in September for the next year. Previous tenders for the planned year are considered. For the remaining part, futures contracts on HUDEX are used and projections using day-ahead prices from CROPEX. The ratio of long and short-term procurement is determined by the TSO for the next year. The usual delivery period of the tendered energy is 1 year or several years and less often 1 quarter or 1 month.	The TSO sends annually to the NRA the document including the value and the corresponding calculation method and the NRA approves it.	yes

<sup>68</sup> The information is imported from ACER's Recommendation No 01/2023, p. 13-20 available here: [https://www.acer.europa.eu/sites/default/files/documents/Recommendations/ACER\\_Recommendation\\_01\\_2023\\_on\\_the\\_Treatment\\_of\\_Losses\\_for\\_the\\_Purpose\\_of\\_the\\_ITC\\_Mechanism.pdf](https://www.acer.europa.eu/sites/default/files/documents/Recommendations/ACER_Recommendation_01_2023_on_the_Treatment_of_Losses_for_the_Purpose_of_the_ITC_Mechanism.pdf)

	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?
Czech Republic	The TSO procures the energy on the short-term market and suppliers via tenders.	<b>Power exchange market and tenders</b> <u>Long-term market data short-term market data and tenders</u> 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.	<b>Power exchange market</b> <u>Long-term market data</u> 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 <sup>69</sup>
Estonia	The TSO procures the energy on the short-term market.	<b>Power exchange market</b> <u>Short-term market data</u> Day-ahead prices of Nord Pool 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 2021 is determined by the TSO without NRA approvals.	yes
Finland	The TSO procures the energy on the short-term market.	<b>Power exchange market</b> <u>Long-term market data</u> 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

<sup>69</sup> 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?
France	The TSO procures the energy on the short-term and long-term market and it organizes tenders.	<p><b>Power exchange market</b></p> <p><u>Long-term market data and tenders</u></p> <p>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).</p>	The basis is set by the NRA in the tarif d'utilisation des réseaux publics de transport d'électricité.	yes
Germany	The TSO procures the energy on the short-term and long-term market and organizes tenders.	<p><b>Power exchange market</b></p> <p><u>Long-term market data</u></p> <p>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 July of Y-3 to 30 June of Y-1) and the weighting of the Base and Peak Future prices is based on historical data.</p>	The methodology for valuing losses is laid down in the respective TSOs' voluntary self-commitments on grid losses which is approved by the NRA <sup>70</sup> .	yes
Greece	The TSO procures the energy on the short-term market.	<p><b>Power exchange market</b></p> <p><u>Long-term market data</u></p> <p>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.</p>	The NRA approves the basis for the calculation of the value of losses for the purpose of the ITC mechanism which is the weighted average day-ahead market price and imbalance settlement.	yes
Hungary	The TSO procures the energy on the short-term and long-term market and organizes tenders.	<p><b>Power exchange market</b></p> <p><u>Long-term market data and short-term market data</u></p> <p>For year Y, the average of HUDEX Future Baseload prices of the first 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 in years.</p>	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. <sup>71</sup>	yes

<sup>70</sup> The German NRA provides the link to the respective publications:  
[https://www.bundesnetzagentur.de/DE/Beschlusskammern/BK08/BK8\\_05\\_EOG/52\\_Kostenpruefung/522\\_Verlustenergie/BK8-18-0009-A/BK8-18-0009-A.html](https://www.bundesnetzagentur.de/DE/Beschlusskammern/BK08/BK8_05_EOG/52_Kostenpruefung/522_Verlustenergie/BK8-18-0009-A/BK8-18-0009-A.html)

<sup>71</sup> The Hungarian NRA provides the link to the respective publication:  
[http://www.mekh.hu/download/f/a5/11000/MU\\_2\\_masodik\\_modositott\\_honlapra.pdf](http://www.mekh.hu/download/f/a5/11000/MU_2_masodik_modositott_honlapra.pdf)

	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?
Ireland	The Transmission Loss Adjustment Factors (TLAFs) are applied to generators to ensure 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. <sup>72</sup>	<b>Direct contracts</b> 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 CO <sub>2</sub> .	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 the short-term market.	<b>Power exchange market</b> <u>Short-term market data</u> The volume-weighted average clearing price which resulted from the Italian Power exchange (day-ahead market) was used. For ITC mechanism in 2021, market data until October 2020 were used.	The basis is set by the TSO using the basis defined by the NRA for the procurement of losses <sup>73</sup> .	yes
Latvia	The TSO procures the energy on the short-term market.	<b>Power exchange market</b> <u>Short-term market data</u> 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
Lithuania	The TSO procures the energy on the short-term market.	<b>Power exchange market</b> <u>Long-term market data</u> 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

<sup>72</sup> Cf. ACER transmission tariff report (2019).

<sup>73</sup> 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?
Luxembourg	The TSO organizes tenders. Differences between real and ex-ante estimated volumes are sold or bought from the spot market.	<b>Tenders</b> 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.	<b>Power exchange market and tenders</b> <u>Long-term market data and Tenders</u> The value of losses is determined based on the procurement costs in the reference year. The TSO procures 50% of the estimated via tenders and the remaining part at EPEX Spot DA price, but as the actual future price should reflect the average spot price, the calculation of the value is only based on the result of the hedging at ICE Endex Baseload Cal-21 futures. The result of the tender which is performed once a year for the next year is a mark-up for the hedged capacity and EPEX Spot DA price, both to be paid to the BRP/supplier of grid losses compensation. For 2021, this mark-up represented about 1.5% of the estimated price.	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.	<b>Power exchange market</b> <u>Long-term market data</u> Nasdaq quarterly forward price is used with some adjustments. It is gathered around 1 November each year, depending on the deadline set by the 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. <sup>74</sup>	yes

<sup>74</sup> 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.	<p><b><u>Power exchange market</u></b>  <b><u>Long-term market data</u></b></p> <p>The value of losses for 2021 was calculated on the basis of future contracts for year 2021 traded from January 2018 to October 2020 (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 89% and 11%.</p>	<p>The basis of calculation of the value of losses is approved during the process of approving the network tariffs.</p> <p>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.</p>	yes
Portugal	Suppliers procure the energy by buying additional energy for their consumers from the short-term market.	<p><b><u>Power exchange market</u></b>  <b><u>Short-term market data</u></b></p> <p>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.</p>	<p>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.</p>	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.	<p><b><u>Power exchange market and Bilateral contracts</u></b>  <b><u>Long-term, short-term market data and bilateral contracts</u></b></p> <p>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).</p> <p>The estimated price is corrected annually, so that the costs of losses covered by tariffs are the costs effectively realized by the TSO (in efficient conditions). The value of losses used for the ITC mechanism in 2021 is the approved price available on the date of is communication to the TSO (November 2020) and estimated in the reference year of the regulatory period (2019). Every November, NRA provides to the TSO the value of losses used in the tariff calculation for the next year for the purpose of the ITC mechanism.</p>	<p>The basis is set by the NRA in Methodology for setting transmission tariffs.</p>	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.	<p><b>Power exchange market</b></p> <p><u>Long-term market data</u></p> <p>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.</p> $PLE(y) = CEPXE(y) \times (1 + 0.01 k(y)) + Q(y),$ <p>where:</p> <ul style="list-style-type: none"> <li>- <i>PLE</i>... price of electricity covering electricity losses during transmission in year y,</li> <li>- <i>CEPXE</i>(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,</li> <li>- <i>k</i>(y)... coefficient for year y determined by the price decision, ranging up to 10 %,</li> <li>- <i>Q</i>(y)... the planned costs of the regulated entity for year y to cover deviation related to planned losses in year y;</li> </ul>	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.	<p><b>Power exchange market and tenders</b></p> <p><u>Long-term market data and tenders</u></p> <p>The final price for losses is a combination of the volumes already purchased in advance on a long-term basis through tenders (only for 'base load' product) and of mix of 'base load' (70%) and 'peak load' (30%) futures products on Hungarian Power Exchange. For 2021, tenders were conducted in 2018, 2019 and 2021 with a yearly delivery period.</p>	Methodology set by the NRA is determined in Legal Act on the methodology for determining the regulatory framework and network charges for the electricity distribution system <sup>75</sup> .	yes
Spain	Suppliers procure the energy by buying additional energy for their consumers from the short-term market.	<p><b>Power exchange market</b></p> <p><u>Short-term market data</u></p> <p>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).</p> <p>The ITC value calculated by the TSO is typically based on the final electricity prices for the last 12 available months.</p>	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. <sup>76</sup>	yes <sup>77</sup>

<sup>75</sup> The Slovenian NRA provides the link to the respective publication:  
[http://www.pisrs.si/Pis.web/pregledPredpisa?id=AKT\\_1050](http://www.pisrs.si/Pis.web/pregledPredpisa?id=AKT_1050)

<sup>76</sup> 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.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/2022-05/ComposicionPrecios_desde_abril2022_web.pdf)  
[https://www.cnmc.es/sites/default/files/2023-02/Provisionales\\_2022.zip](https://www.cnmc.es/sites/default/files/2023-02/Provisionales_2022.zip)

<sup>77</sup> The Spanish NRA explains losses' price estimation is also used in incentives schemes for minimising losses for distribution.

	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?
Sweden	The TSO procures the energy on the short-term market.	<p><b>Power exchange market</b></p> <p><u>Long-term market data</u></p> <p>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.</p>	The method for the valuation of losses is set by the TSO without NRA approval <sup>78</sup> .	yes <sup>79</sup>

<sup>78</sup> 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.

<sup>79</sup> 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.