entsog
european network
of transmission system operators
for gas

FOURTH ENTSOG REPORT ON

IMPLEMENTATION AND EFFECT MONITORING OF THE TARIFF NETWORK CODE

2024 EDITION

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1 OPENING REMARKS

TARIFF NETWORK CODE – BACKGROUND AND APPLICABLE DATES

The **Network Code on Harmonised Transmission Tariff Structures for Gas ('TAR NC')** was developed as per the process set out in Article 6 of Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005 ('Gas Regulation'), which involved the European Network of Transmission System Operators for Gas ('ENTSOG'), the Agency for the Cooperation of Energy Regulators ('ACER'), the European Commission ('EC') and other market participants.

The aim of the TAR NC is to further harmonise the principles laid down in the Gas Regulation, in particular the ones set out in Articles 13, 14(1)(b) and 14(2). Thus, the TAR NC contributes to achieving tariffs, or methodologies used to calculate them, which are transparent, take into account the need for system integrity and its improvement, reflect the actual costs incurred, non-discriminatory, facilitate efficient gas trade and competition, avoid cross-subsidies between network users and provide incentives for investment. The TAR NC was published in the Official Journal of the European Union on 17 March 2017 and entered into force on 6 April 2017[1].

The TAR NC foresaw **three different application dates ('ADs') for its different chapters**, as shown in Figure 1.[2]

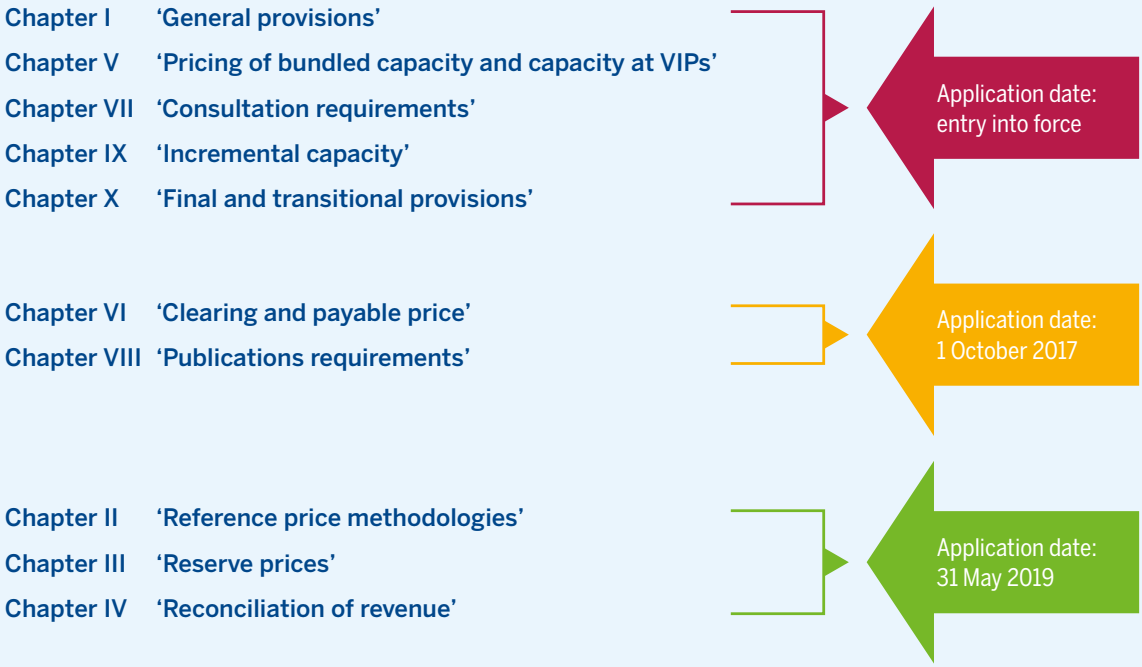


Figure 1: TAR NC application dates

1 **Official Journal of the European Union**

2 Art. 13(3) of the TAR NC also set out the option for ACER to suggest a recommendation by 1 April 2021 to reduce the value of daily and within-day multipliers. After a public consultation, in 2021 **ACER proposed** not to amend the daily and within-day multipliers but advised NRAs to better justify the values they select for these multipliers.

This report consists of **two parts: Implementation monitoring ('IM') and Effect monitoring ('EM')**, which echoes the requirements of the Gas Regulation.

Article 8(8) of the Gas Regulation requires ENTSOG to *'monitor and analyse the implementation of the Network Codes and the Guidelines adopted by the Commission in accordance with Article 6(11), and their effect on the harmonisation of applicable rules aimed at facilitating market integration'*. This Article also requires ENTSOG to *'report its findings to the Agency and [...] include the results of the analysis in the annual report'*.

In addition, the TAR NC outlines some specific requirements. Article 36 'Implementation monitoring' of the TAR NC contains specific provisions related to the IM: it sets the deadline of 31 December 2019 for the transmission system operators ('TSOs') to submit the required information to ENTSOG. ENTSOG complied with submitting the implementation information to ACER by 31 March 2020. The TAR NC does not contain specific provisions related to the EM.

In accordance with requirements in Art. 36(3) of the TAR NC, which stipulates that *'[t]he implementation monitoring cycle as set out in paragraphs 1 and 2 shall be repeated in forthcoming years subject to corresponding requests from the Commission'*, this report is produced every two years. Based on this principle, this 2024 report follows the last report which was issued in 2022.

Although this report is published in 2024, it uses data applicable for TSOs on 1 October 2023 for both IM and EM monitoring. ENTSOG has developed this report for two reasons:

(1) to monitor the **implementation status** of the TAR NC by TSOs, as of 1 October 2023, and,

(2) to monitor its **effects** on the European gas market, with indicators covering data on 1 October 2023.[3]

The executive summary of this report is also included in **ENTSOG's Annual Report for 2023**.

3 All indicators used in the EM part are focused on data available on **1 October 2023**. For some indicators this data covers past calendar years, gas years or specific years (TAR.1 and TAR.2). For other indicators this data describes the prevailing situation on 1 October 2023 (TAR.3, TAR.4 and TAR.5).

2 EXECUTIVE SUMMARY

SCOPE OF THE REPORT AND BACKGROUND OF THE TARIFF NETWORK CODE

This Monitoring Report 2024 provides an overview of the implementation status of the Tariff Network Code (TAR NC) by European Transmission System Operators (TSOs). The report also analyses the TAR NC's effect on the European gas market, as of **1 October 2023** and changes in application of the TAR NC in comparison to previous editions of the report.

The TAR NC facilitates efficient trade and competition and lays out methodologies to transparently and cost-reflectively calculate tariffs, to avoid cross-subsidies between network users and to provide incentives for investment.

Apart from the **regulatory dimension**, this report can also be potentially looked at in the **context of current developments**. Since the previous edition of this report in 2022[4], which was focusing on data until 2021, the EU gas market experienced significant changes. Among key events, there were the post-COVID-19 economic recovery and the EU gas crisis in 2021–22[5]: new gas storage targets, a sharp rise in LNG supplies compensating for a drop in Russian pipeline flows and the sabotage of the Nord Stream pipelines and reorganisation of gas flows with the ensuing congestion premia at some IPs. Some indicators in this report may allow to register the potential impact of these events on TSOs.

Concerning the structure of the report, it consists of **two parts: Implementation monitoring ('IM')** and **Effect monitoring ('EM')**. The information presented in this report was collected from the participating European TSOs via questionnaires by ENTSOG. In total ENTSOG received 42 questionnaire responses; 48 TSOs took part in reviewing this report. Non-participation in responding to ENTSOG's questionnaire can be explained by derogations and exemptions from the TAR NC.

IMPLEMENTATION MONITORING (IM) – GENERAL REMARKS

With the various editions of this report, **we can see the progress of implementing the TAR NC** by the European TSOs over the years. Looking at the data of this edition, we can register the **very high compliance level of the European TSOs** to the provisions of the Network Code and a **further closing of minor application gaps** compared to the previous report.

In a very minor number of specific cases of derogating from TAR NC rules, National Regulatory Authorities (NRAs) have provided justifications. Overall, we can see that TSOs have adapted the TAR NC rules with high compliance in a process lasting several years.

4 The previous edition of the report is available **here** on the ENTSOG website.

5 Month-ahead and day-ahead prices reached more than 300 EUR/MWh in August 2022 at the Dutch TTF hub. For more information see this **Council page** or this **review** from the Oxford Institute for Energy Studies for example.

TRENDS, HIGHLIGHTS AND CHANGES – COMPARISON OF RESULTS TO THE 2022 EDITION OF THE IM REPORT

By analysing the responses to our IM questionnaire, we can conclude from the 42 answers we received that as of 1 October 2023, all **42 European TSOs applied the 'new Reference Price Methodology (RPM)'**, i. e., based on rules in line with the TAR NC[6]. One TSO from Bulgaria currently applies the rules in an implementation effort, however, while the formal decision of the NRA is still outstanding.

Looking at the progress, in the 2020 report a significant share of EU TSOs was still using the 'prevailing' RPM due to ongoing tariff periods which differ in the Member States. In the 2022 report, two TSOs still used the prevailing rules because of their ongoing tariff period. In our 2024 report we see all TSOs applying the new Reference Price Methodology. This evolution **shows the strong progress of TAR NC implementation** that has happened **over the past years**.[7]

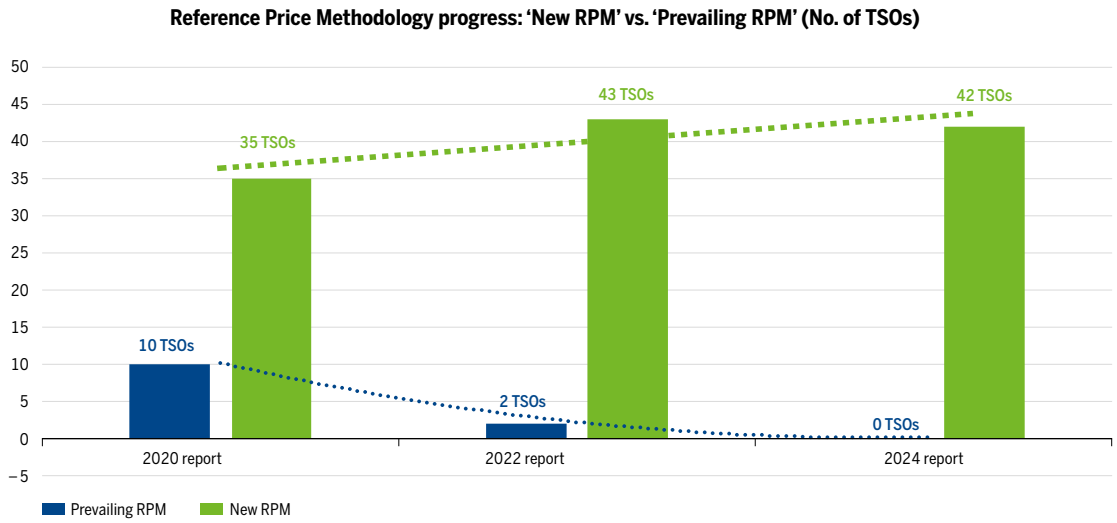


Figure 2: Progress of application of new RPM. For information on the data set and participating TSOs please see section 3.

Concerning **adjustments to the application of the RPM, rescaling is the most widespread tool** used by TSOs, with equalisation on second place, followed by benchmarking adjustment.

This order of application is in line with the findings of last report.

6 For an explanation of 'new RPM' and 'prevailing RPM' please see the introduction section of the Implementation monitoring part.

7 Please note that the number of TSOs who answered the questionnaire and participated changed throughout the years. Between 2022 and 2024 for example the Brexit came into force, removing the UK TSOs from the report, plus a TSO ceasing operations.

One interesting point where we can notice changes is the area of discounts for capacity-based tariffs for entry and exit to **storage facilities** and entries from **LNG facilities**.

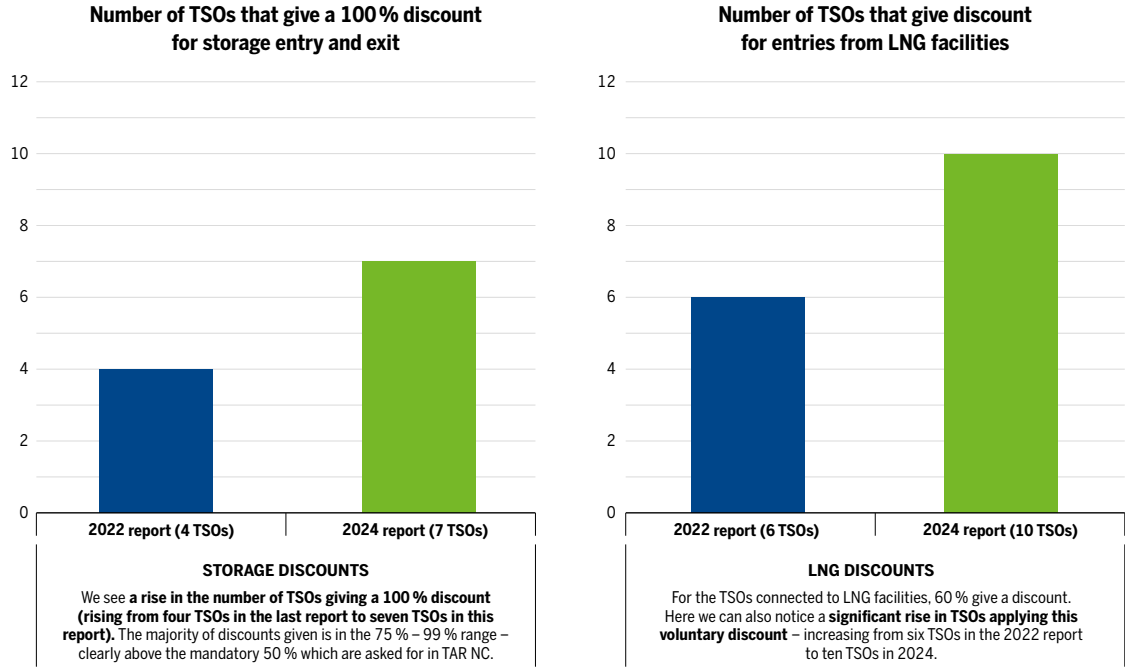


Figure 3: Rise in storage and LNG discounts

Looking at **reserve prices** we we can monitor the following changes: Concerning **re-adjustments in the middle of a tariff period**, we see the effects of ongoing market mergers and of the energy crisis in 2022. The **number of re-adjustments of tariffs has minimally risen** in comparison to the 2022 report from 18 to 19 cases. The number of cases in the 2024 report consists mostly of the **market merger** in Germany and **tariff adjustments due to the impact of the energy crisis** after the Russian invasion of the Ukraine and changes in gas flows in Europe.

On the topic of **interruptible discounts** the number of TSOs applying the **ex-ante interruptible discount has risen** and the number of TSOs using **the ex-post discount has decreased** in comparison to the last report.

In the area of **reconciliation of revenues** and looking at regimes, **non-price cap regime is the overwhelmingly used model**. More than 90 % of European TSOs who answered operate partly or fully under a non-price cap regime – TSO models stayed very similar to the results of the 2022 report. Concerning the length of the revenue reconciliation, the **majority of TSOs reconcile revenue over a period of one to three years**. In comparison to the findings of the 2022 report, the **number of TSOs utilising a one year reconciliation period has dropped** significantly – from 15 TSOs to 8 TSOs in the current report.

When monitoring pricing of bundled capacity and capacity at VIPs, **VIP tariffs are defined by a majority** of TSOs **using the reference price of the VIP itself** – we see a rise in TSOs using this approach in this report. Over the years we can register a switch from weighted average tariff of IPs for VIPs to tariffs directly derived for the VIP through the RPM.

The TAR NC introduced the level of 'broad scope' – rules to be applied to all points – and 'limited scope' – to be applied to IPs. For third-country points, a majority of TSOs apply limited scope rules – we notice **a significant increase of TSOs applying limited scope to third-country points** in comparison to the last report.

As the implementation level of the TAR NC had already progressed in the last report, many factors are generally comparable to the last report. However, as the TAR NC provides different options in certain areas, we can still register changes and trends from one IM report to the next as outlined above.

EFFECT MONITORING – GENERAL REMARKS

The EM part of this report analyses the effect of the TAR NC on the European gas market, taking account of the different application dates of the TAR NC. The effect of the TAR NC across the market has been studied by means of **five indicators** (the same indicators were used in the previous edition of the report, with at times limited changes, though):

- **TAR.1** 'ratio of under-/over-recoveries to allowed/target revenues'
- **TAR.2** 'changes in capacity-based tariffs'
- **TAR.3** 'seasonal factors for IPs'
- **TAR.4** 'publication of information in English'
- **TAR.5** 'multipliers for products with quarterly, monthly, daily and within-day durations'.

EFFECT MONITORING – TRENDS, HIGHLIGHTS AND CHANGES

In the time span of 2013–2022, the average European TSO had an **under-/over-recovery evolving in a range from −2.6 % to +6.8 % compared to its allowed/target revenue**, although some TSOs had annual under-/over-recoveries significantly higher or lower than these values.

The first notable EM fact in 2021 and 2022 is the **growing heterogeneity of TSO imbalances in comparison to previous years, as shown by indicator TAR.1**.

While the average TSO typically continues to recover almost exactly its regulated revenue, in 2021 and 2022 **the minority of TSOs with significant under-recoveries or over-recoveries[8] has steadily increased** – from no more than three TSOs in a given year until 2019, to five TSOs in 2020, seven in 2021 and ten TSOs in 2022.

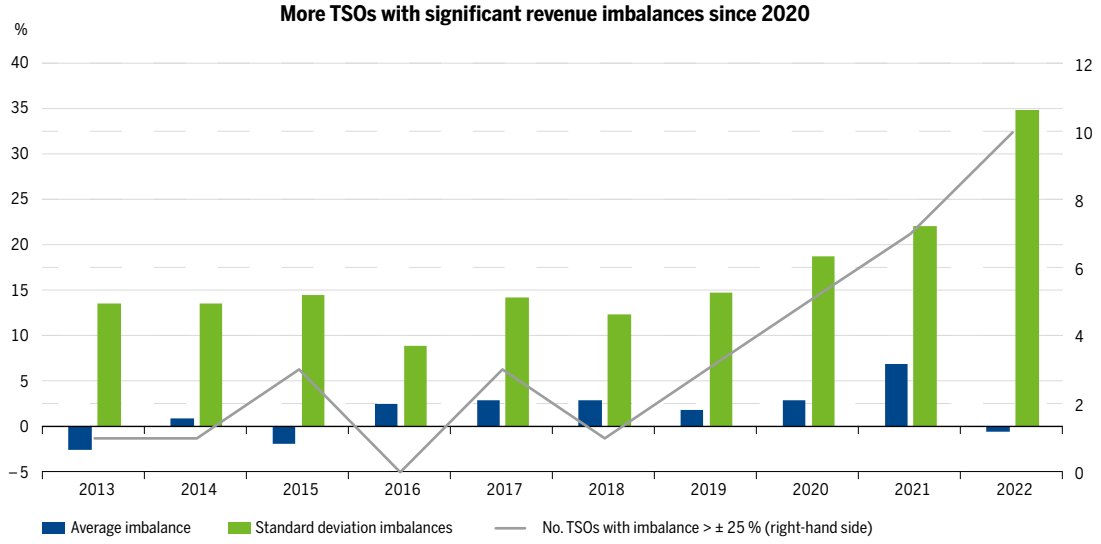


Figure 4: Changing patterns on EU gas TSO revenue recovery since 2020

Based on TSOs' feedback, it seems that **high over-recoveries** for some TSOs may be caused by increased LNG entries, congestion revenues at IPs in connection with changing flow patterns in Europe to supply alternatives to Russian pipeline gas, and the economic upturn after COVID-19. National reasons are clearly also explanations in several cases.

High under-recoveries for a few other TSOs may be explained by reduced bookings and flows after the drop in Russian supplies. Here as well, national factors contributed to evolutions.

8 Significant under- or over-recovery is defined here as ± 25 % compared to the regulated revenue.

The EU gas **TSOs are therefore affected differently** in terms of revenue recovery, with a small but growing number of TSOs with deviations from their regulated revenue in recent years.

A major point to highlight is that TSOs are not structurally earning more or less than their regulated revenue since there is typically a reconciliation in the next few years.

The second important change in this EM report in 2024 is the **unprecedented discrepancy between TSO tariff evolutions and inflation levels, as shown by indicator TAR.2**, while inflation and TSO tariff changes were rather close until 2020.

While **EU inflation reached 2.9 % in 2021 and 9.2 % in 2022** according to Eurostat, average **TSO tariffs just increased by 0.7 % and 0.8 % in the same time span**. The median TSO registered 0.0 % and 0.3 % increases in 2021 and 2022.

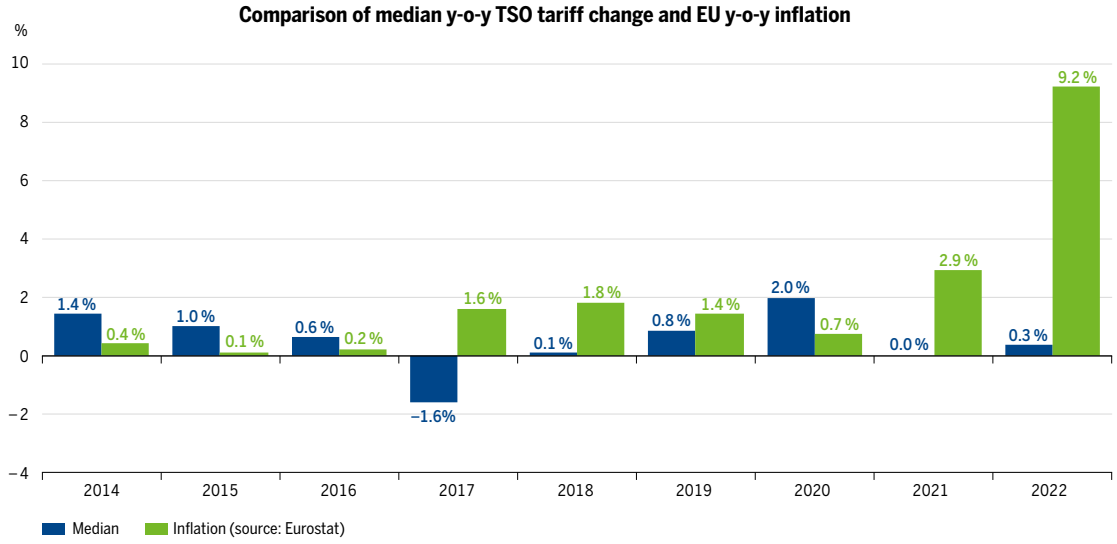


Figure 5: Median TSO tariffs significantly fell behind inflation since 2021

The **high inflation in Europe** caused by the combination of the post-COVID-19 economic recovery and the supply shock from reduced Russian pipeline flows was not yet incorporated in tariffs for many TSOs in 2021 and 2022. Nevertheless, in a few countries, tariff moderation in 2022 is possibly a result of over-recoveries in relation to increased LNG entries and IP congestion premia.

Concerning other EM areas of interest, **seasonal factors are used by only nine TSOs** and follow rules from the TAR NC. No major evolution is notable compared to the 2022 edition of this report.

Regarding **publication of tariff information in English**, when it was TSOs' responsibility to publish such information, **TSOs indicated it is now published in English in all cases**. Transparency on tariffs has therefore reached peak application compared to 2022.

In terms of multipliers, all TSOs are compliant with the ranges of multipliers defined in the TAR NC, except one TSO regarding within-day multipliers, a topic for which the TAR NC only gives a default value that may be derogated from. Compared to the 2022 edition of the report, all TSOs have now shifted to a tariff period different from the one at the entry into force of the TAR NC.

As a closing comment, we believe this **Monitoring Report has gained new value since the last edition in 2022**. The EM indicators possibly show some of the impact of the recent macroeconomic shocks in Europe. It will be important for TSOs to understand if the change in patterns in 2021–22 was just an exception or the start of a new trend.

3 DATA SET: TSO PARTICIPATION, DEROGATIONS AND EXEMPTIONS FROM THE TARIFF NETWORK CODE

For this edition of our report, 48 TSOs participated by reviewing and drafting the report and 42 TSOs among them contributed with data. The non-sending of data for specific TSOs is due to derogations and exemptions from TAR NC (derogated Member States, merchant TSOs, exempted TSOs).

The information was collected by means of a questionnaire. TSOs were asked to provide links to published information or other supporting data to back-up their answers.[9]

3.1 DEROGATIONS FROM TAR NC – MEMBER STATES

Article 2(2) of the TAR NC specifies that the TAR NC does not apply in Member States that hold a derogation in accordance with Article 49 'Emergent and isolated markets' of Directive 2009/73/EC ('Gas Directive'). Article 2(2) echoes Article 30 of the Gas Regulation, which exempts the applicability of the Gas Regulation to MSs for as long as they hold such a derogation. Like all the other Network Codes, the TAR NC supplements the Gas Regulation, and forms an integral part of it, so if the Gas Regulation does not apply, neither does the TAR NC.

Malta, Cyprus, and Luxembourg currently have derogations.

- **Cyprus** will not be affected by the TAR NC if it remains an isolated market without a gas transmission system.
- **Luxembourg** holds a derogation according to Article 49(6) of the Gas Directive, which refers to its Article 9 on unbundling of transmission systems and TSOs.
- **Malta** is derogated, and the future network of the prospective TSO Interconnect Malta Ltd. is not yet commissioned.

Previously, **Estonia** kept a partial derogation until the commissioning of the Poland-Lithuania GIPL pipeline, which started operations on 1 May 2022. Hence, this derogation no longer applies – and Elering's answers are reflected in this report.

9 Concerning checking completeness of information, Article 36 'Implementation monitoring' of the TAR NC states: '*ENTSOG shall ensure the completeness and correctness of all relevant information to be provided by transmission system operators*'. For ENTSOG, this means that all the relevant information is published consistently as per the TAR NC and that the information provided on the TSOs' website (and on ENTSOG's Transparency Platform) corresponds to the relevant gas year and tariff period. Ensuring that all individual data items published by the TSOs are correct remains a responsibility for the relevant NRAs as part of the NRAs' obligation to ensure TSO compliance with their obligations. In case the publication requirement is the responsibility of the NRA, TSOs could provide information and links to the NRA website on a voluntary basis. However, ENTSOG has no obligation to monitor the NRAs' activities.

3.2 PARTICIPATION AND TSOs CONTACTED

From **13 October 2023**, ENTSOG contacted the European TSOs to collect the required information for this report. Here is an outline of TSOs whose participation ENTSOG requested or not:

- **TSOs contacted**: ENTSOG asked for the participation of **48 TSOs from 26 Member States (MSs) and one other European country (Switzerland)**[10].
  - **All 44 ENTSOG Members and Associated Partners** as of 1 October 2023 were invited to participate[11].
  - **Two Non-Members from Germany** (Fluxys Deutschland GmbH and Lubmin-Brandov Gastransport GmbH) were also contacted, based on their participation in past editions.
  - **A Non-Member from Poland** (Transit Gas Pipeline System) which didn't participate in past editions was contacted via national gas TSO GAZ-SYSTEM S.A., due to a change in its status on tariff-setting since January 2023. Transmission services provided by GAZ-SYSTEM S.A. on the Transit Gas Pipeline System are now settled according to the tariff approved by the President of Polish NRA ERO upon the request of GAZ-SYSTEM S.A.
  - **A Non-Member from Malta** (Interconnect Malta Ltd.), a prospective TSO which already participated in the 2022 report due to the 2020 Maltese consultation on TAR NC implementation[12], was contacted for participation and review of the report.

3.2.1 MERCHANT TSOs – PARTIAL DEROGATION

- The two TSOs **BBL Company V.O.F. and Interconnector Limited are merchant TSOs and ENTSOG Members** that operate interconnectors and hold derogations under Article 37 TAR NC, which means that they have been granted derogations for some provisions of the Code by their NRA(s). Both were contacted for this report. These two TSOs connect Great Britain with respectively the Netherlands for BBL Company V.O.F., and Belgium for Interconnector Limited. Therefore, each of them depends on two NRAs. For this report, and noting their status as ENTSOG Members, BBL Company V.O.F. is considered a Dutch TSO and Interconnector Limited is considered a Belgian TSO.

3.2.2 MERCHANT TSOs – FULL EXEMPTION AND DEROGATION

- **The TSO ICGB AD is a merchant TSO and ENTSOG Member** operating an interconnector holding a derogation from TAR NC. No data was requested therefore.

3.2.3 EXEMPTED TSOs

- **Trans Adriatic Pipeline AG (TAP), which is an ENTSOG Associated Partner**, was not requested to send data because of being an Interconnector with an ongoing exemption from requirements on third party access, tariff regulation and ownership unbundling laid down in Articles 9, 32, 41(6), 41(8) and 41(10) of Directive 2009/73/EC. This TSO connects Turkey with Italy, via Greece and Albania, but noting that TAP's headquarters are in Switzerland, this TSO is considered a Swiss TSO in this report.

- **TSOs and MSs not contacted:** In accordance with the process followed for previous editions, ENTSOG did not ask for the participation of TSOs with the status of ENTSOG Observers or any other Non-Members. Since a Member State (Cyprus) is derogated and, in addition, does not have a TSO system, no Cypriot entity was contacted to participate in this report.

10 Following Brexit and the end of the ENTSOG membership of the three UK TSOs GNI (UK) Ltd., National Grid Gas plc (renamed 'National Gas Transmission plc' in February 2023), and Premier Transmission Ltd. in late 2021, these three TSOs and former ENTSOG members were not asked to participate in this report.

11 The status of one ENTSOG Member, Spanish TSO Regasificadora del Noroeste S.A. (or 'Reganosa'), changed as Reganosa ceased operations as a gas TSO on 29 September 2023. Reganosa is therefore not counted as a Member here, since the reference date for this report is 1 October 2023. Source: **Enagás 2023**

12 Source: MEAE 2020, Maltese Gas Transmission System Reference Price Methodology in accordance with Commission Regulation (EU) 2017/460 of 16 March 2017.

This report therefore includes participation **from 48 TSOs from 26 out of 27 Member States (MSs) and one other European country (Switzerland)** as detailed below:

(1) **Data was received from 24 MSs where the TAR NC entered into force and applied either as of 6 April 2017** (Austria, Belgium, Bulgaria, Croatia, Czechia, Denmark, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden) **or since 1 January 2020** (Estonia and Finland)[13];

(2) **Data was not received from two MSs where a derogation is in place** (Luxembourg and Malta) but the corresponding TSOs participated in the drafting of the report[14];

(3) **Trans Adriatic Pipeline AG (TAP)**, an Associated Partner of ENTSOG headquartered in a non-MS (Switzerland), participated in the preparation of the report but was not requested to send data because of their ongoing exemption from the European Commission from Articles 9, 32, 41(6), 41(8) and 41(10) of Directive 2009/73/EC[15];

(4) Data was not received from merchant TSOs with full derogation and exempted TSOs as explained above.

While the application of the TAR NC is mandatory in the first 24 Member States above, it is only optional in the Member States with a derogation and for TSOs headquartered in Non-Member-States.

In total, **48 European TSOs from the above-mentioned 27 countries** (26 EU MSs plus Switzerland[16]) **participated in the report (reviewing and reading):** the 43 ENTSOG Members, one Associated Partner, and four other European TSOs[17]. In total, **42 TSOs contributed with data[18] to our questionnaire**. Non-contribution with data is explained due to derogations and exemptions.

The data set which lays the ground for the analysis of the Implementation and Effect Monitoring is as follows and explained in the previous section:

- ENTSOG contacted 48 TSOs via questionnaires for Implementation and Effect Monitoring.
- ENTSOG received responses from 42 TSOs.
- For the remaining operators, TSOs have exemptions or derogations (Creos Luxembourg S.A., ICGB AD, the prospective TSO Interconnect Malta Ltd., Trans Adriatic Pipeline AG).
- In two cases, one TSO responded on behalf of underlying TSOs.
  - **For two TSOs in Italy (Società Gasdotti Italia S.p.A. and Infrastrutture Trasporto Gas S.p.A.),** as per their national regulatory framework, **tariffs are calculated and published by a third TSO from the same MS (Snam Rete Gas S.p.A.)** which is responsible for tariff derivation. For this report, the information for these two TSOs is contained in the information sent by the third TSO, and therefore only counted once[19]. This is in line with the counting method of the 2022 Monitoring Report.
  - **GAZ-SYSTEM S.A. (Poland) submitted two data sets – one for GAZ-SYSTEM and one for TGPS GAZ-SYSTEM S.A.** As these are two separate data sets with different answers, this is counted as two answers.

Accordingly, there are **42 TSOs counted in the report since they sent data, but 48 TSOs listed as participating in Annex A** since they contributed in wording and reviewing.

13 Estonia and Finland had general derogations applicable until 1 January 2020. In addition, Estonia kept a partial derogation until the commissioning of the Poland–Lithuania GIPL pipeline, which started operations on 1 May 2022.

14 These are TSO Creos Luxembourg S.A. (LU) and prospective TSO Interconnect Malta Ltd. (MT). Only Creos Luxembourg S.A. is an ENTSOG Member.

15 Based on TAP's own Network Code, this TSO 'has obtained an exemption from provisions on third party access, regulated tariff and ownership unbundling, subject to the terms of the **Final Joint Opinion** of the Energy Regulators on TAP AG's Exemption Application dated 6 June 2013, granted by the NRAs pursuant to Directive 2009/73/EC. The NRAs have subsequently approved the Transporter's tariff methodology'. Source: **TAP 2020**. TAP's Tariff Code is published on **TAP's website**. In the previous 2022 report, in one point in the text TAP was referred to as a derogated TSO, we have corrected this wording and adjusted it with 'exemption' in this edition.

16 In respect of ENTSOG's Associated Partner 'Trans Adriatic Pipeline AG', which is registered in Switzerland.

17 Fluxys Deutschland GmbH, Lubmin-Brandov Gastransport GmbH, the prospective TSO Interconnect Malta Ltd., and the Transit Gas Pipeline System (TGPS) owned by EuRoPol GAZ s.a. and operated by GAZ-SYSTEM S.A.

18 As already mentioned, Creos Luxembourg S.A. (LU), the prospective TSO Interconnect Malta Ltd. (MT), ICGB AD (Bulgaria), and Trans Adriatic Pipeline (CH) did not send data due to derogations/exemptions.

19 According to the Italian regulation (**Resolution 139/2023/R/gas of 4 April 2023**) which establishes tariff regulatory criteria for the period 2024-2027 in line with TAR NC requirements, the main TSO (Snam Rete Gas S.p.A.) is responsible for the calculation of the transmission tariffs with reference to the entire Italian transmission network. Therefore, it also applies for the portion of the network managed by ENTSOG members Società Gasdotti Italia S.p.A. and Infrastrutture Trasporto Gas S.p.A.

Picture courtesy of Enagás

4 IMPLEMENTATION MONITORING

4.1 INTRODUCTION, SCOPE, TARIFF NETWORK CODE APPLICATION

This part of the report presents the results of the implementation monitoring for the provisions of the TAR NC mentioned in the scope, with the information applicable on **1 October 2023** for the respective TSO.

As the different chapters of the TAR NC came into effect at different points in time (please see figure 1 on details), the IM part of this report covers requirements that were already applicable both before and after the deadline corresponding to the last application date (AD) of 31 May 2019.

As TSOs kept rules prevailing on 31 May 2019 until the end of their ongoing tariff period, some of the TAR NC rules actually took effect only after a number of years. It explains why this report covers these provisions already applicable in past editions. Concerning the structure of the report, we based the sections on the numerical order of the Articles in the TAR NC.

4.1.1 SCOPE

According to TAR NC Article 36, the scope of the Monitoring Report gradually included more detailed monitoring – after the year 2020 the report should cover all provisions of TAR NC other than Chapter VIII 'Publication requirements'. However, in agreement with ACER, it was decided to only cover the most significant and relevant parts of the TAR NC. This report discusses provisions from all Chapters with the exception of Chapter VII and Chapter XI – as these areas of interest are discussed in other publications – for more information see the following section 'Requirements covered in the report'.

4.1.2 APPLICATION DATE AND COMPLIANCE DATE

Although all chapters of the TAR NC have specific application dates (AD), the TAR NC allowed for compliance at a later date for some provisions within these Chapters. For example, the AD for Chapter II 'Reference price methodology' was 31 May 2019. However, Article 27(5) permits retaining tariffs applicable at such date **until the end of the prevailing tariff period**. Therefore, the compliance date is later than the AD, since different tariff periods are applicable across the EU. For this reason, the past TAR NC Monitoring Reports covered 'prevailing' RPMs and 'new' RPMs and this differentiation is still referred to.

4.1.3 REQUIREMENTS COVERED IN THE REPORT

Details of what is covered in the IM part of this report are provided below. The Chapters are listed in the order they are discussed in the report. Altogether, the IM questionnaire comprised **64 questions**. However, not all of them were applicable to all TSOs.

Information collected for **Chapter I 'General provisions'** includes Article 2 'Scope', Article 4 'Transmission and non-transmission services and tariffs', and Article 5 'Cost allocation assessment'. Article 2 covers the 'limited scope' rules applied at (1) points with third countries and (2) points other than interconnection points ('IPs') and other than points with third countries, where the NRA has decided to apply the rules at these points. Article 4 covers provisions available for classification of non-transmission services, and rules for the use of commodity-based charges. Article 5 covers the assessments carried out on the capacity and commodity-based transmission tariffs, indicating the degree of cross-subsidisation between intra-system and cross-system network use.

Chapter II 'Reference price methodology' – The provisions in this Chapter apply to the 'new RPM'. When referring to the 'new RPM' in this report, this is the RPM that has been consulted on as per TAR NC Article 26 and should have been approved by the respective NRA by 31 May 2019. TSOs have progressively changed to the 'new RPM' by changing tariff periods, and all TSOs reply in our current report that they use the 'new RPM' (including one case, where the RPM is applied but the NRA has not yet put out a motivated decision) on the data collection reference date of 1 October 2023. The TAR NC Articles covered in this Chapter are Article 6 on RPM application, Article 8 on the Capacity-Weighted Distance (CWD) RPM, and Article 10 on rules for multi-TSO entry-exit systems in a single MS.

For Chapter III 'Reserve prices' at IPs multipliers are covered and an analysis follows whether they are within the TAR NC stipulated ranges or not. This section also covers seasonal factors, whether they have been calculated as per the TAR NC methodology, and discounts on interruptible capacity products. This chapter discusses the following TAR NC Articles: Article 12 on general provisions, Article 13 on multipliers and seasonal factors, Article 15 on reserve price calculations for short-term firm products, and Article 16 on reserve prices calculations for interruptible capacity products.

For **Chapter IV 'Reconciliation of revenue'** the focus lies on TSOs which function under a non-price cap regime, and the overview covers the reconciliation period, the reconciliation of non-transmission services, how the regulatory account is utilised, and – where applied – the use of auction premia. These topics correspond to TAR NC Article 17 on general provisions, Article 19 on the regulatory account, and Article 20 on regulatory account reconciliation.

The information collected for **Chapter V 'Pricing of bundled capacity and capacity at virtual interconnection points'** covers the plans for the attribution of the auction premium from the sale of bundled capacity and the options used for the calculation of the reserve price for unbundled products offered at Virtual Interconnection Points (VIPs). These topics correspond to TAR NC Article 21 on the price of bundled capacity and Article 22 on VIP pricing.

For **Chapter VI 'Clearing price and payable price'**, information was collected regarding the application of fixed or floating payable prices at IPs and the risk premium applied on fixed payable prices. The corresponding TAR NC Article is Article 24 on payable price calculations at IPs.

As in previous reports (2020, 2022), **Chapter VII 'Consultation requirements'** is not discussed in this edition. In 2020 ACER prepared a monitoring of consultation requirements and the topic was not kept in previous editions of the TAR NC Monitoring Report. The same approach applies to this report.

Chapter VIII 'Publication requirements' – As in the previous editions of this report, publication requirements as per Article 29 'Information to be published before the annual yearly capacity auction' are not covered in this report[20]. This is because it is covered by a review carried out by ACER after the 2019 capacity auctions. In contrast, TAR NC Article 30 *'Information to be published before the tariff period'* is covered in this report – including parameters used in the applied reference price methodology and revenue information.

Chapter IX 'Incremental capacity' is not covered in this 2024 report. The contents of Chapter IX of the TAR NC on 'Incremental capacity' are found in the INC Monitoring report.[21]

The information collected for **Chapter X 'Final and transitional provisions'** covers TAR NC Article 35 'Existing contracts' and whether these contracts have been impacted by the TAR NC.

20 However, Effect Monitoring indicator TAR.4 – as to whether tariff information is available in English – covers the case of Art. 29 on information relative to the annual yearly capacity auction (see section 5.2.4 for more information on TAR.4).

21 The latest INC report for the years 2021–2023 can be found **here** on the ENTSOG website.

4.1.4 REMARKS ON POSSIBLE TSO ANSWERS

In many cases, the questions were structured to allow the TSO to answer **'Yes', 'No', 'N/A'** (i.e., 'not applicable') and/or **'NRA responsibility'** (in case the TSO is not in charge of the specific topic), followed by a text box to provide additional or clarifying comments. In other cases, there was no predefined answer to a specific question.

For the implementation of certain provisions of the TAR NC, such as Chapter VIII *'Publication requirements'*, responsibility could either be with the NRA or the TSO, as decided by the NRA. As this report only covers the implementation of the TAR NC by TSOs, not NRAs, in the MSs where the responsibility for a certain provision is with the NRA, the TSOs could answer 'NRA responsibility' in the questionnaire and move on to the next question. Alternatively, TSOs had the opportunity to mention 'NRA responsibility' and to provide information on recent developments and any interaction they had with their NRA on these provisions, such as sharing documents or related information.

The TSO could also answer 'N/A' for **certain questions that were not relevant to the TSO**.

For example, a question on seasonal factors could be answered 'N/A' if the TSO does not apply seasonal factors. 'N/A' could also be answered for the articles that were irrelevant for the TSOs that hold a derogation under Article 37.

4.2 ANALYSIS OF RESPONSES – IMPLEMENTATION MONITORING

This section has been structured following the numerical order of the Chapters in the TAR NC. Information from the **42 TSO data sets** was considered.

Where it is possible and relevant, the responses and data for the 2024 report are compared with the responses from the 2022 report. One element to be kept in mind is that in the 2022 edition there were 45 responses and in the 2024 report there were 42 responses – so there is a difference in the number of answers. However, as the number of responses is close and general trends can be observed, the authors of this report thought a comparison concerning progress and changes in the implementation of the TAR NC would be interesting for the readers.

4.2.1 TAR NC – CHAPTER I – GENERAL PROVISIONS

4.2.1.1 'Scope' Article 2

The TAR NC can be divided into 'broad scope' rules and 'limited scope' rules.

- **'Broad scope'** rules are applied to all points on the transmission network;
- **'Limited scope'** rules only apply at IPs by default.

However, nothing prevents NRAs from extending the 'limited scope' rules to non-IPs. As per definitions in the CAM NC, **'IP'** means a physical or virtual point connecting adjacent entry-exit systems or connecting an entry-exit system with an interconnector within the EU.

'Non-IPs' include entry-points-from or exit-points-to third countries and points such as domestic exit points, entry-points-from or exit-points-to storage facilities or other facilities. As set out in Article 2 of the TAR NC, the 'limited scope' rules are covered in Chapters III, V, VI, Article 28, Article 31(2) and (3) in Chapter IX.

INSIGHT 1:
More than half of TSOs are applying the limited scope at points with third countries

22 TSOs are applying 'limited scope' rules at points with third countries. 10 TSOs replied that they are not applying 'limited scope' rules at points with third countries, and 10 TSOs replied that this question is non-applicable for them – for example as they do not have points with third countries.

The number of TSOs applying the 'limited scope' rules at points with third countries has risen in comparison to the report of 2022, where only 18 TSOs have applied these rules. The number of TSOs answering 'yes' to this question is now in the majority (22 TSOs apply rules vs. 20 TSOs claiming 'no' or 'N/A') – a change to the 2022 report (18 TSOs applying rules vs. 27 TSOs with 'no' or 'N/A').

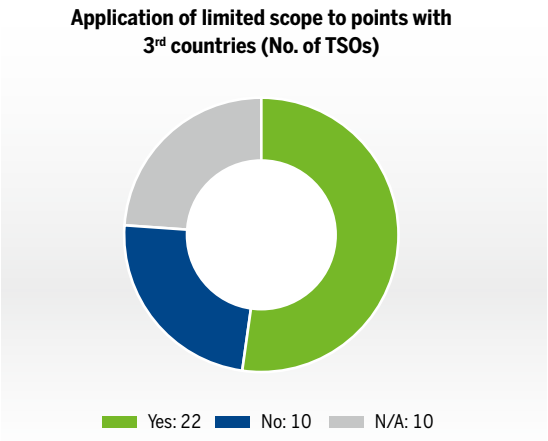


Figure 6: 22 TSOs apply limited scope to points with 3rd countries

INSIGHT 2:
Roughly 40 % of TSOs apply the limited scope at points other than IPs and 3rd country points

Currently **16 TSOs** are applying applicable 'limited scope' rules at points other than IPs and other than points with third countries. This number has risen in comparison to the last report in 2022, where 11 TSOs did apply these rules to the respective points.

The remaining **26 TSOs** are not applying 'limited scope' rules at these points.

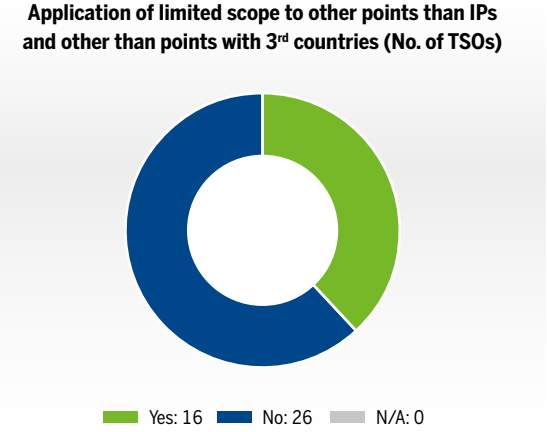


Figure 7: 16 TSOs apply limited scope to other points than IPs and 3rd country points

4.2.1.2 'Transmission and non-transmission services and tariffs' Article 4

The TAR NC covers the way TSOs collect revenues via different tariffs associated with the provision of services at entry and exit points. The services are therefore separated into **'transmission services'** and **'non-transmission services.'** The transmission services revenue is split into a 'capacity' part and a 'commodity' part.

INSIGHT 3:
Roughly 65 % of TSOs provide Non-Transmission Services

28 TSOs have indicated that they provide non-transmission services. Some of the services listed are 'biogas charge', 'market area conversion levy', 'storage compensation', 'metering services', 'pressure reduction fee', 'change of facilities by deviation', 'extra area consumption fee' and 'administrative fee'. **14 TSOs** have indicated that they do not provide non-transmission services. In comparison to the 2022 report, the number of TSOs providing non-transmission services has minimally risen from 27 to 28 TSOs.

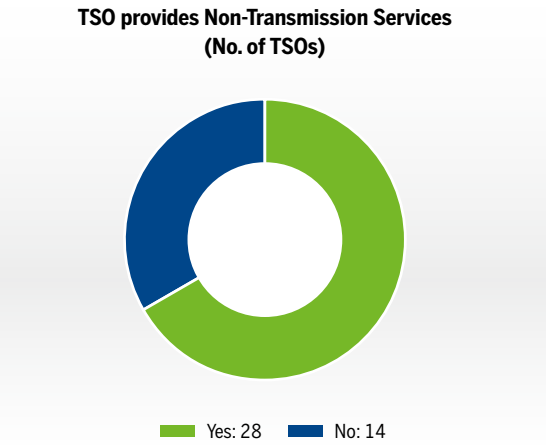


Figure 8: Non-Transmission Services are offered by 28 TSOs in Europe

INSIGHT 4:
40 % of TSOs charge a commodity tariff

17 TSOs have indicated that they apply commodity-based tariffs. **25 TSOs** have said that they don't.

The portion of TSOs using commodity-based tariffs has slightly decreased in comparison to the 2022 report – with 19 TSOs using a commodity charge in the 2022 report and 17 TSOs in the current 2024 report.

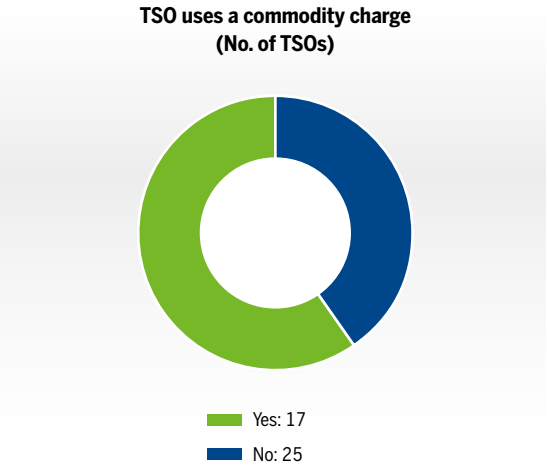


Figure 9: Commodity tariffs are charged by 17 TSOs in Europe

4.2.1.3 'Cost allocation assessments' Article 5

The TSO or the NRA, as decided by the NRA, shall perform, and publish **as part of the final consultation referred to in Article 26**, a **cost allocation assessment** (CAA) relating to the transmission services revenue to be recovered by *capacity-based transmission tariffs*, as well as a cost allocation assessment relating to the transmission services revenue to be recovered by *commodity-based transmission tariffs*, if any.

The purpose of the cost allocation assessments is to indicate the degree of cross-subsidisation between intra-system and cross-system network use, based on the proposed RPM. For additional information on the Article 26 consultations and publications thereof please see Annex C, and the **Implementation Document (IDoc)** developed by ENTSOG, TSOs, and other stakeholders[22].

The TAR NC stipulates that, for the capacity CAA, cost drivers should be 1) technical capacity, or 2) forecasted contracted capacity, or 3) technical capacity and distance, or 4) forecasted contracted capacity and distance.

INSIGHT 5:
Forecasted contracted capacity is used by around 85 % of TSOs as a cost driver for the capacity CAA

In 26 cases, forecasted contracted capacity was the sole cost driver used for the capacity CAA. Distance was also used as an additional cost driver for the capacity CAA for 9 TSOs. In contrast, technical capacity and technical capacity and distance was applied as a cost driver in two cases. Four TSOs replied 'Other' or 'N/A' to this question. They indicated that they had a derogation on capacity CAA provisions and in one case 'N/A' was selected because they pointed out the CAA calculations were irrelevant for them. The reason given was that cross-system use was non-existent on their network and forecasted contracted capacity will be applied for the regulatory period starting in 2024.

The percentage of cost drivers is very much comparable to the results of the 2022 monitoring.

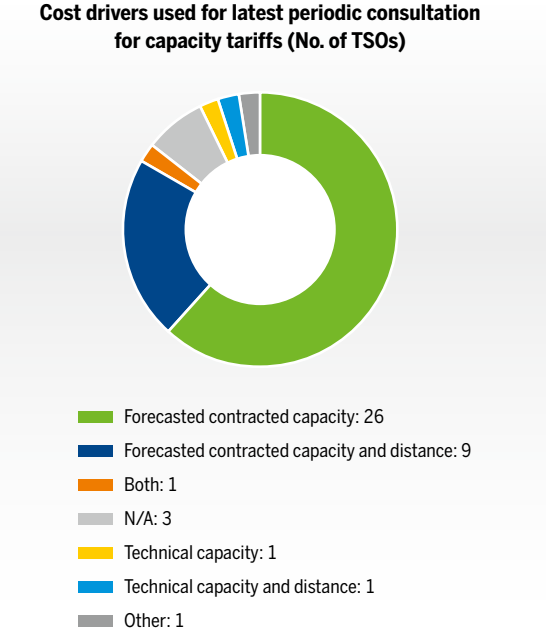


Figure 10: Forecasted contracted capacity is used by 36 TSOs as a cost driver for the CAA on capacity tariffs

22 ENTSOG 2018

INSIGHT 6:
Less than 25 % of NRAs had to justify the value of the capacity CAA

For 31 TSOs, results from the capacity CAA were under the threshold of 10 % set in the TAR NC[23], which shows that cross-subsidies between intra-system and cross-system use, as measured by the CAA, were very limited in many cases. Hence, no justification is required (answer is 'N/A').

When above 10 %, **ten TSOs said their NRAs gave an explanation**. Only in one case, there was no justification provided ('No') – meaning that the NRA gave no justification.

These responses from the 2024 monitoring are very comparable to the results of 2022 – where 11 TSOs said that the NRA had to justify a result above 10 % of the capacity CAA and one NRA provided no justification.

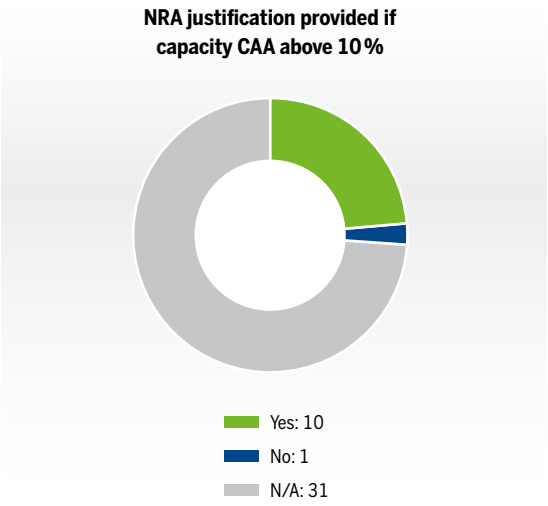


Figure 11: Only ten European TSOs said that their NRA had to justify a CAA test above 10 %

INSIGHT 7:
An overwhelming majority of TSOs who use commodity charges use 'Gas Flows' as main cost driver for periodic consultation

Regarding the **commodity CAA, 28 European TSOs** replied 'N/A' as to which cost drivers were used in the latest periodic consultation. Ten TSOs use 'Gas Flows', and four TSOs 'Gas Flows and Distance' as cost drivers in the latest periodic consultation. The discrepancy in the numbers between Insight 4 (17 TSOs charge a commodity tariff) and Insight 7 (14 TSOs indicate their cost drivers for commodity CAA) can be explained with two TSOs being derogated and one TSO not applying commodity charges at cross-border points.

This result is comparable to the 2022 report.

All TSOs but one declared that NRAs did not have to provide a justification for a commodity CAA above the 10 % threshold, since the calculated ratio was always under this value.

This is a **consequence of the application of the TAR NC** in the different MSs: Article 4(3) stipulates that the flow-based charge should be 'the same at all entry points and the same at all exit points.'

Therefore, since TSOs generally apply in practice one single commodity charge whatever the points and at all their points, the absence of commodity tariff modulation per point results in no cross-subsidies through the commodity charge.

The one TSO where a justification was provided explained that it is because of **a specific rule that excludes commodity charge at the only cross-border point** connecting this TSO to other TSOs in their multi-MS multi-TSO entry-exit system.

The results from this insight are comparable to the results in the last report.

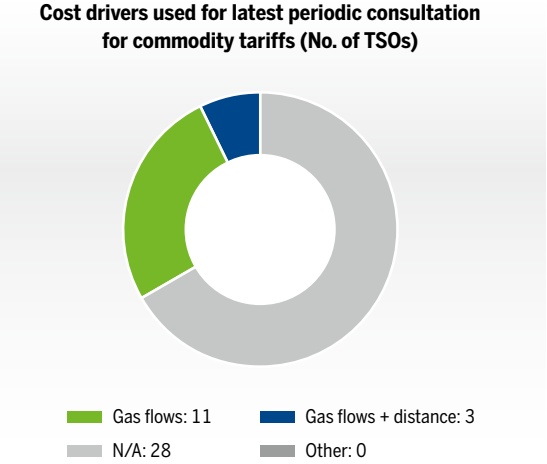


Figure 12: Gas flows are used by 14 TSOs as a commodity cost driver for CAA

23 Article 5(6) of the TAR NC stipulates that *'[w]here the results of the capacity, or respectively commodity cost allocation comparison indexes referred to in paragraph 3(c) or, respectively paragraph 4(c), exceed 10 percent, the national regulatory authority shall provide the justification for such results in the decision referred to in Article 27(4).'* This criterion is used to check if the amount of cross-subsidies between intra-system – i.e. domestic – use and cross-system – i.e. transit – use does not exceed a certain level. A result above 10 % indicates for example that the revenue-to-cost ratio from domestic users is significantly higher than the revenue-to-cost ratio from transit users; it implies that domestic users pay significantly more than transit users for the network costs they generate, which means cross-subsidies to the benefit of transit users. The CAA also assesses cross-subsidies to the benefit of domestic users.

4.2.2 TAR NC – CHAPTER II – REFERENCE PRICE METHODOLOGY

4.2.2.1 'Reference price methodology applications' Article 6

Applying the reference price methodology (RPM) results in reference prices for each entry and exit point on the system. So the RPM applies not only to IPs but also to non-IPs. For IPs, it provides the basis for calculating the reserve prices for different standard firm and interruptible capacity products. A general requirement is to apply the same RPM at all the entry and exit points within an entry-exit system. The only exception is for a multi-TSO entry-exit system, whereby the respective TSOs can apply the same RPM jointly or separately, or different RPMs separately.

The TAR NC does not insist on a particular RPM. Instead, it specifies the requirements for such methodologies, their aims, and possible adjustments to the application of the RPM. It also requires that the chosen RPM for each TSO be compared to the Capacity-Weighted Distance (CWD) counterfactual, as described in Article 8 of the TAR NC.

INSIGHT 8:
All TSOs applied the TAR NC-based 'new RPM' rules on 1 October 2023

All 42 TSOs answered that, as of 1 October 2023, they were applying the 'new RPM' rules set out in the TAR NC and following the requirements of the periodic consultation that had to be finalised by 31 May 2019. One TSO takes on the new RPM rules in an implementation effort, but the final decision of the NRA is still outstanding.

Here we see the high compliance with the TAR NC and also the phase-out of 'prevailing RPMs'. In the last report of 2022, we saw two TSOs still using the 'prevailing RPM', which is not the case anymore. The chart below shows the progress for the application of the new RPM, tracked in the respective TAR NC Monitoring Reports.[24]

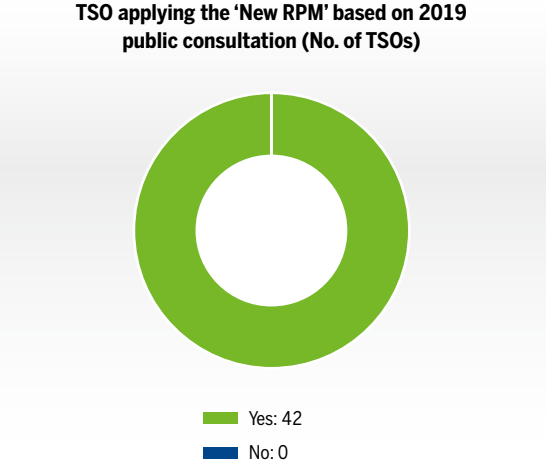


Figure 13: The 'new RPM' rules are already applied by 42 European TSOs

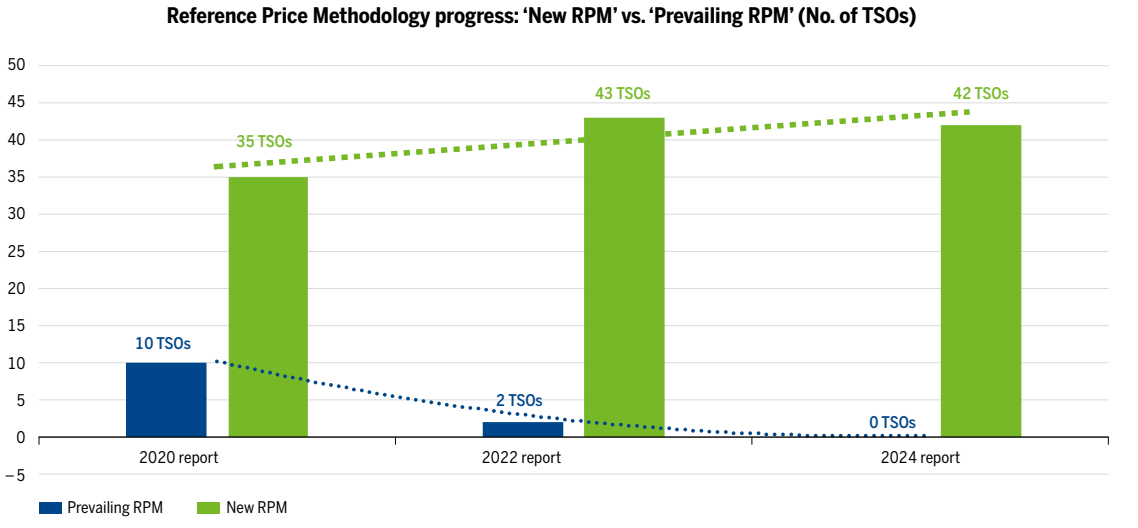


Figure 14: Progress of application of new RPM

24 Please note that the number of TSOs, which answered the questionnaire and participated, changed throughout the years. Between 2022 and 2024 for example the Brexit came into force, removing the UK TSOs from the report, plus a TSO ceasing operations.

INSIGHT 9:
The same RPM is applied at all points in the entry-exit system for all non-derogated TSOs

It is a key provision in the TAR NC that the tariffs at all TSO points should be calculated following the same methodology.

All TSOs to whom this provision applied confirmed that they apply the same RPM at all their network points. This ensures homogeneity in the tariff approach and rules out undue cross-subsidies that would result from different methodologies applied at different points. **One TSO is derogated and applies different approaches at their points and indicated 'N/A' in its answer.**

In this insight we also can see the progress of the RPM application – as all non-derogated TSOs apply the same RPM to all points in the entry-exit system. In the last report of 2022, one non-derogated TSO did not do this as it still used the 'prevailing RPM'.

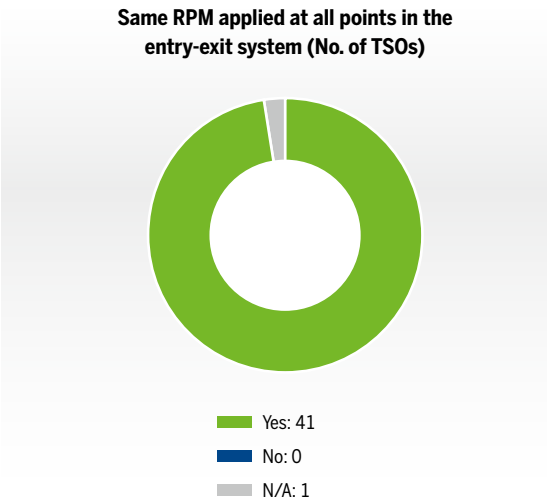


Figure 15: All TSOs to whom this provision applied confirmed that they apply the same RPM at all their network points

Insight 10:
Adjustments to application of RPM: The benchmarking adjustment is in use for less than 15 % of TSOs

According to Article 6 of the TAR NC, **the benchmarking provision makes it possible to adjust tariffs at specific points** in case non-adjustment would result in detrimental effects – for example because of competition from other gas routes, especially regarding transit flows.

Data collected from the TSOs shows that the overwhelming majority of TSOs does not use the benchmarking provision.

However, seven TSOs implemented the benchmarking adjustment – generally speaking in order to align with the competitive level. We see a very slight rise in the use of the benchmarking adjustment, from six TSOs from 2022 to seven TSOs in 2024.

Reasons for the benchmarking adjustment:

One central-European TSO applies it at two points to avoid the construction of a bypass pipeline. Another central-European TSO uses a special benchmark exit tariff at a certain point to align with the competitive level of a competing transportation route. A Baltic TSO uses benchmarking on points with third countries. An Eastern European TSO applies benchmarking to all points in the system.

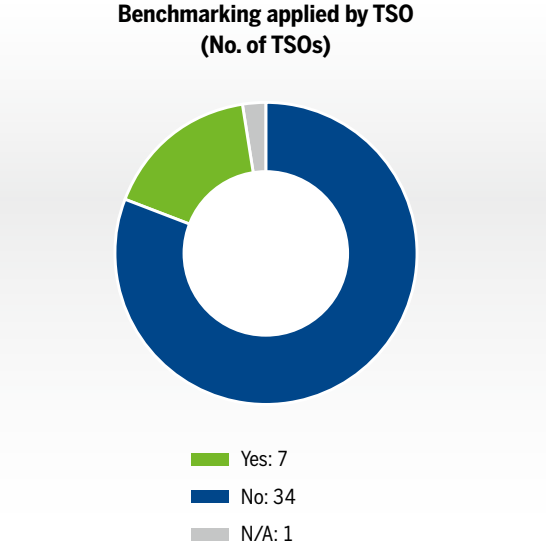


Figure 16: The benchmarking adjustment is used by seven European TSOs

Insight 11:
Adjustments to application of RPM: Around one third of TSOs declared that they apply the equalisation adjustment

Along with the benchmarking adjustment in the same Article 6 of the TAR NC, **the equalisation adjustment offers NRAs the possibility to decide that the same tariff will apply at all points of a homogeneous group**. For example, the NRA may decide that the TSO entry tariff will be the same at all LNG terminals, or the same at all entry and/or exit IPs.

Twenty-eight TSOs indicated that they did not apply equalisation in 2023. Thirteen TSOs did apply the equalisation adjustment. This result is very similar to the result of the 2022 report.

It should be noted there is a key difference between the equalisation and the benchmarking adjustments. Benchmarking gives the option to use a different tariff approach at specific points, while equalisation gives the option to use the same tariff value at specific points.

In addition, with the implementation of the TAR NC, a number of European TSOs have now shifted to the 'simple' Postage Stamp (PS) methodology[25]. It should be noted that this RPM itself already equalises the tariffs upfront. It is therefore not necessary for these TSOs to use equalisation which is 'built-in' to their methodology. That is why the relatively 'low' number of TSOs who reply that they do apply equalisation should not hide the fact that **tariffs are already *de facto* equalised by the Postage Stamp RPM in several cases**.

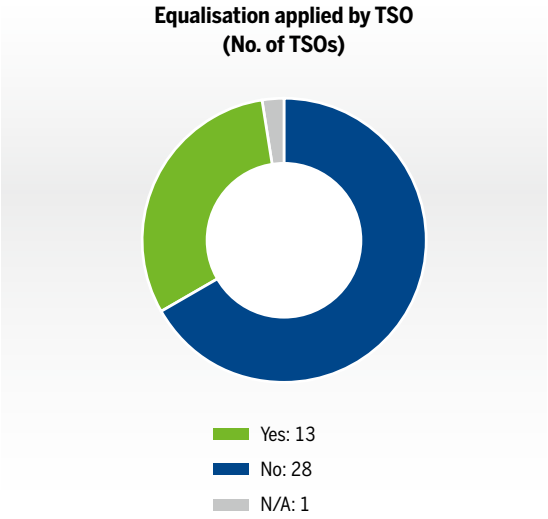


Figure 17: 13 European TSOs apply the equalisation adjustment

INSIGHT 12:
Adjustments to application of RPM: Rescaling is more widespread than the two other Article 6 adjustments – 23 European TSOs use rescaling

Beside benchmarking and equalisation, Article 6 also sets out the possibility of **rescaling tariffs, so that the whole set of tariffs may be adjusted up or down via the same additive or multiplicative coefficient**.

The objective is to ensure that, after tariffs are calculated based on the RPM and considering potential discounts, revenues collected through tariffs should match the TSO's allowed or target revenue.

As a last remark on Article 6 adjustments, it should be reminded that **some TSOs apply two or three types of adjustments together**, for example 'benchmarking and equalisation and rescaling'. There is no restriction in the TAR NC regarding combinations of these adjustments.

Compared to benchmarking and equalisation, there is a larger use of rescaling, with slightly more than half of TSOs applying it in 2023 (23 TSOs). The preferred approach for rescaling was via a **multiplicative** coefficient to adjust tariffs (21 TSOs), rather than an **additive** amount (2 TSOs). One TSO said the topic was not applicable for them. These results are comparable to the results of the 2022 report.

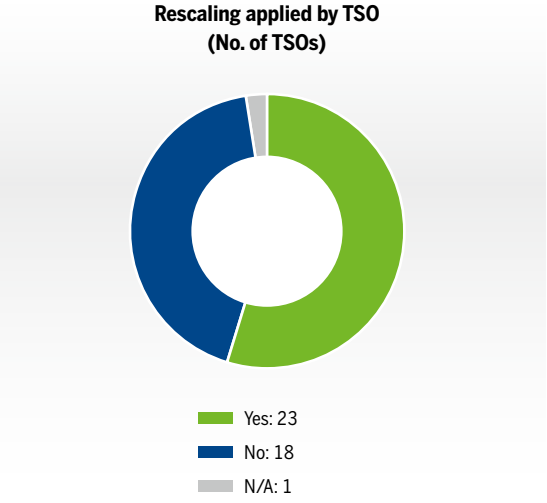


Figure 18: With 23 European TSOs using rescaling, it is the adjustment with the widest use

25 Data available in Annex D indicates that 26 TSOs from 13 Member States applied Postage stamp as their Reference Price Methodology at the time of data collection.

4.2.2.2 'Capacity weighted distance reference price methodology' Article 8

The TAR NC requires a comparison of the resulting indicative reference prices to those derived from the only RPM set out in the TAR NC, which is the **Capacity Weighted Distance ('CWD')** counterfactual. This comparison is to be included in the tariff methodology consultation, as set out in Article 26(1). The CWD methodology is used as the **counterfactual** as it incorporates key cost drivers, i.e., capacity and distance.

INSIGHT 13:
Thirty-nine European TSOs fully comply with the CWD counterfactual comparison

Nearly all TSOs apply the capacity weighted distance counterfactual – with 39 TSOs confirming this. Three TSOs indicated 'N/A' as the answer – as two TSOs have derogations and for one TSO a recent change in ownership structure and limited data in certain areas meant that the TSO was not able to provide information on this question.

This result is comparable to the 2022 report and **shows the high levels of compliance across Europe in terms of comparison of the chosen RPM in each MS with the CWD methodology** described as a reference approach in the TAR NC.

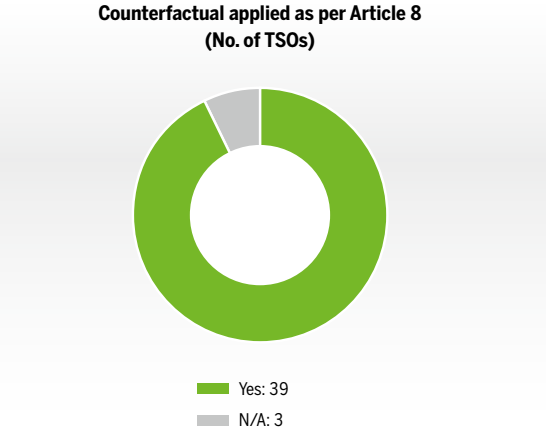


Figure 19: Thirty-nine European TSOs said they apply the CWD counterfactual according to Article 8 rules

4.2.2.3 'Adjustments of tariffs at entry points from and exit points to storage facilities and at entry points from LNG facilities and infrastructure ending isolation' Article 9

Along with Article 6 adjustments (benchmarking, equalisation, and rescaling), the TAR NC also offers additional **flexibility in Article 9**, with the setting of discounts at TSO points connected to storages, LNG terminals, or specific infrastructure ending isolation of MSs.

INSIGHT 14:
28 TSOs connected to a storage facility apply storage discounts equal to or higher than the default 50 %

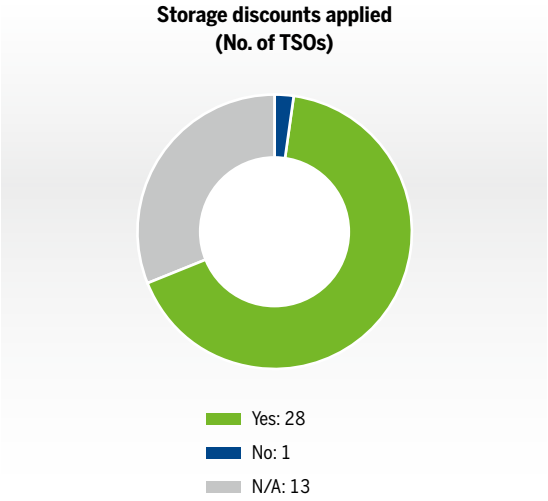


Figure 20: Number of TSOs applying storage discounts

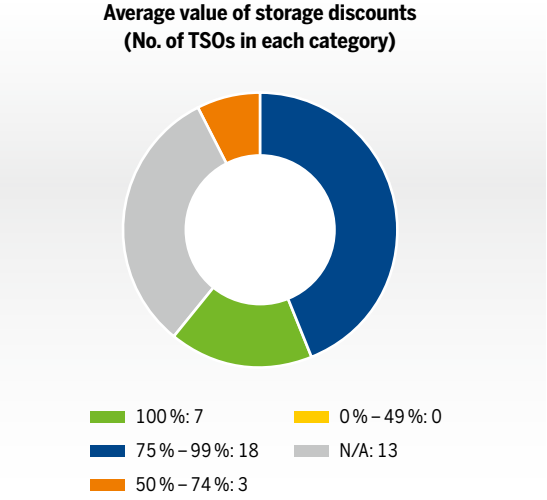


Figure 21: Average value of storage discount

The TAR NC stipulates that *'a discount of at least 50 % shall be applied to capacity-based transmission tariffs at entry points from and exit points to storage facilities, unless and to the extent a storage facility which is connected to more than one transmission or distribution network is used to compete with an interconnection point.'* The case of storage facilities connected to several networks is quite marginal and can be neglected in this report – however it applies to the one TSO who responded 'No' to applying discounts to storage in figure 20.

In practice, **28 TSOs apply high capacity discounts** (i.e., equal to or above 50 %) **at entry and exit points with storage facilities**, as depicted in the graph above[26].

Eighteen TSOs in our study have mentioned they apply tariff discounts between 75 % and 99 % on capacity charges at points with SSOs (Storage System Operators). Three TSOs apply the default discount value of 50 %, or up to 74 %. Seven other TSOs fully exempt network users from capacity charges at points with storages (i.e., with a 100 % discount). One TSO does not apply a discount in line with the exception given in Article 9[27]. 13 European TSOs chose 'N/A' as they do not have a storage facility in their network.

In comparison to the last report we see a rise in TSOs who give a 100 % discount (seven TSOs currently vs. four TSOs in the last report). The majority of TSOs applies storage discounts between 75–99 % – showing discounts above the 50 % which are asked for in the TAR NC.

INSIGHT 15:
Discounts at TSO entries from LNG terminals: Various approaches – majority of discounts at 1 % – 49 %

The TAR NC sets out that *'[a]t entry points from LNG facilities, and at entry points from and exit points to infrastructure developed with the purpose of ending the isolation of Member States in respect of their gas transmission systems, a discount may be applied to the respective capacity-based transmission tariffs for the purposes of increasing security of supply.'*

First of all, for a majority of TSOs in this report, this question is not applicable as they are not connected to an LNG terminal – 25 TSOs imply this via our questionnaire. Seven TSOs say that they do not apply an LNG discount. The TAR NC foresees the possibility to apply discounts but does not imply an obligation. National tariff codes may differ, and the discount may not be established.

The majority of TSOs who are connected to an LNG facility apply discounts – in this report about 60 % of the TSOs connected to LNG facilities give the discount. The remaining 40 % do not give a discount – pointing to national regulation as well, which foresees no discount.

The discounts that are given vary in their level. One TSO applies a 100 % discount at entry points from LNG terminals. German TSOs apply a discount of 40 %, which is applicable solely for yearly and quarterly capacity products. One TSO applies a discount which is valid for the year 2023 but will discontinue the discounts for the period of 2024 onwards. Others apply discounts in the range of 10 –15 %.

In comparison to the last report, the number of TSOs which give this discount has significantly risen from six TSOs in the 2022 report to ten TSOs in the 2024 report.

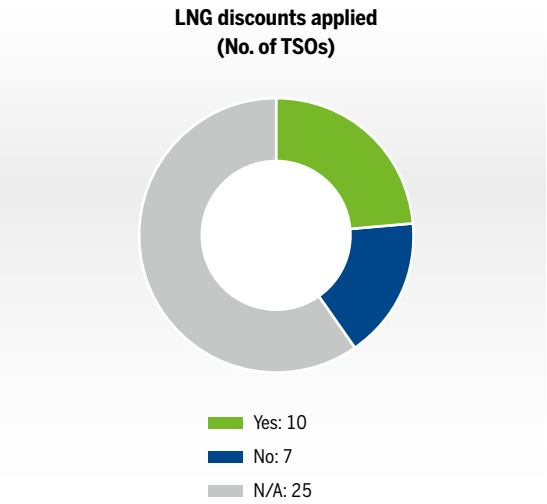


Figure 22: Number of TSOs applying LNG discounts. Out of 17 TSOs connected to an LSO (LNG System Operator), 10 TSOs apply a tariff discount.

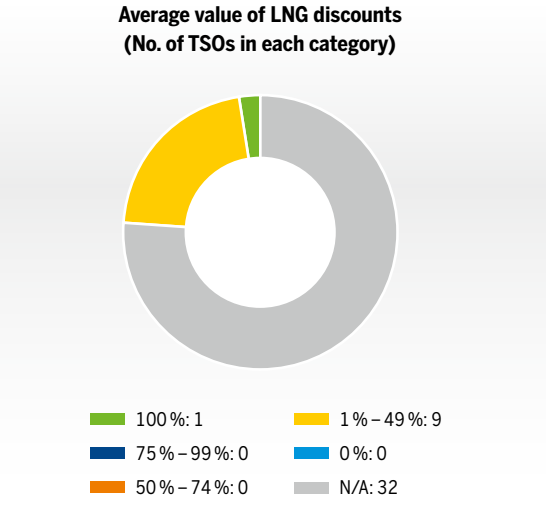


Figure 23: Average value of LNG discounts

26 Please note that the chart considers the calculated average of TSO discounts at entry and exit storage points in case different discounts are set by a TSO, depending on the flow direction.

27 Since the storage facilities in the MS of the TSO are directly connected also to a distribution network and transmission network in another Member State, these connections are used to 'compete with an interconnection point' and the discount is not applied.

4.2.2.4 'Rules for entry-exit systems within a Member State where more than one transmission system operator is active' Article 10

As mentioned in section 4.2.2.1, **by default the same RPM must be applied to all entry and exit points within a system.**

An exception exists for Member States with more than one TSO active, where Article 10 of the TAR NC gives the possibility to either apply the same RPM separately, or different RPMs separately in the event of a planned system merger. If the TSOs apply the same RPM jointly, their respective NRAs should consult on the principles of an effective Inter-TSO compensation mechanism (ITC) at the same time as the Article 26 consultation.

INSIGHT 16:
Eighteen TSOs operate in a multi-TSO system within one Member State

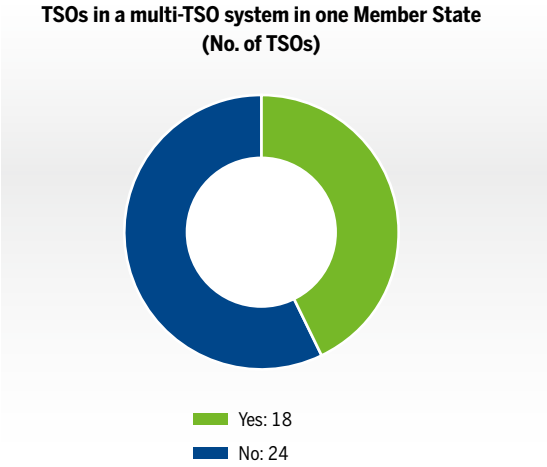


Figure 24: Eighteen European TSOs operate in multi-TSO systems in one Member State

In 2023, Member States and European countries where multi-TSO entry-exit systems prevail within one Member State are found in **Germany, Austria, France** and **Italy**. Most of the other TSOs operate as the only TSO in an entry-exit system covering one and the same Member State. The remaining TSOs are active in multi-TSO entry-exit systems spanning at least two Member States: this is the case in the BeLux system (Belgium and Luxembourg), in the Danish-Swedish entry-exit system, and in the Baltic area (Finland, Estonia, and Latvia)[28].

Eighteen TSOs in our report belong to a multi-TSO systems in a single Member State, as shown in the previous chart. The remaining TSOs are either the only operators in their Member State, belong to a multi-Member State system (Belgium–Luxembourg, Denmark–Sweden, Finland–Estonia–Latvia) or in one case have each a separate single-TSO system in the same Member State.

Far from being a marginal topic, the situation of multi-TSO systems in a single Member State represents **a frequent configuration in terms of the number of TSOs; however, it concerns only four Member States in Europe.** The countries and number of TSOs in a multi-TSO system in a single Member State has undergone changes compared to our 2022 report.[29]

INSIGHT 17:
Joint RPM application is the only approach used in one-Member-State multi-TSO systems

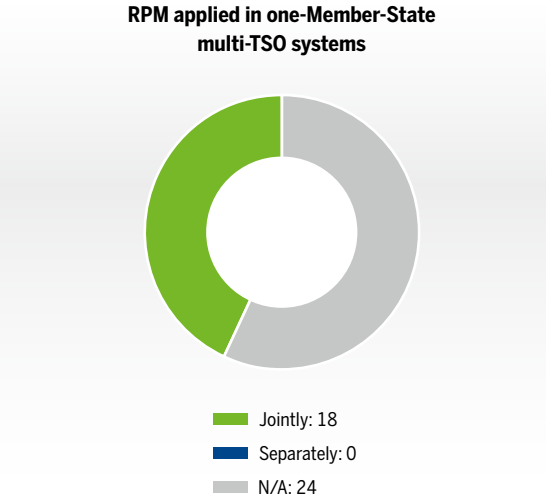


Figure 25: None of European TSOs in one MS multi-TSO systems applies RPMs separately

Even if the TAR NC envisages the option that the RPM be applied separately for the different TSOs in a multi-TSO system in one Member State, in practice **the default approach of a joint RPM application is followed in every European MS concerned by this configuration**. The graph above shows that all eighteen TSOs in this situation are covered by a joint RPM application in 2023. The option of a separate RPM application is not used in 2023.

This ratio has stayed exactly the same as in the 2022 report, in which no TSOs in a multi-TSO system in one Member State applied the RPM separately.

28 Therefore, if one aggregates TSOs operating either under a national or international entry-exit system, most European TSOs belong to multi-TSO systems.

29 Concerning the monitored countries, the Brexit has removed the UK and Northern Ireland from this list. Also the situation in Spain changed, as due to the former TSO Reganosa ceasing operations, Spain is now a single-TSO system.

INSIGHT 18:
Each TSO belonging to a one-MS multi-TSO system is covered by an ITC mechanism

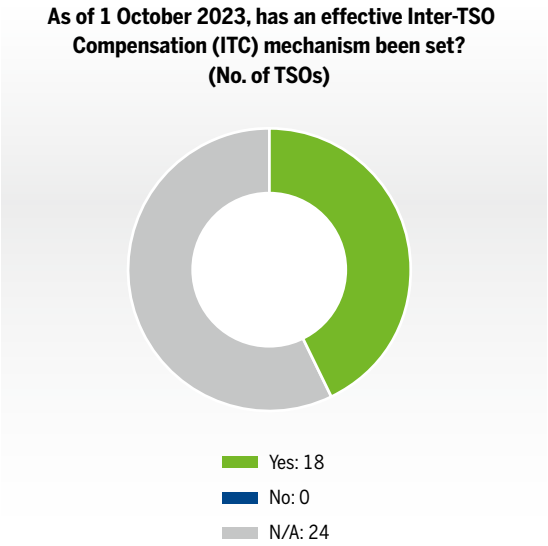


Figure 26: All 18 TSOs in multi-TSO systems in one MS are covered by an ITC mechanism

The information submitted by European TSOs operating in one-MS multi-TSO entry-exit systems shows that **all of them are covered by ITC mechanisms**. Overall, this proves good compliance with Article 10 of the TAR NC, which mandates the use of an ITC in this specific configuration.

For all four Member States in this situation with a multi-TSO system in the same Member State (Germany, Austria, France and Italy), the NRAs have therefore designed ITC mechanisms that ensure revenue transfers among TSOs – especially to accommodate for the removal of IPs connecting TSOs which belong to the same entry-exit system.

This percentage has stayed exactly the same as in the 2022 report, 100 % of TSOs in a multi-TSO system in one Member State were covered by an ITC mechanism.

4.2.3 TAR NC – CHAPTER III – RESERVE PRICES

4.2.3.1 'General provisions' Article 12

For IPs, the reserve price serves as a floor in the relevant capacity auction. **The CAM NC foresees five standard capacity products**: yearly, quarterly, monthly, daily and within-day. The reserve price for firm yearly capacity is equal to the reference price. The reserve prices for firm non-yearly capacity products involve the application of formulas with multipliers based on the reference price and, optionally, seasonal factors.

As set out in Article 12(3) of the TAR NC, reserve prices shall be binding *'for the subsequent gas year or beyond the subsequent gas year in case of fixed payable price, beginning after the annual yearly capacity auction'*, **except if tariff recalculations are made** after the start of the tariff period. Specific conditions are required for recalculations.


Picture courtesy of Enagás

INSIGHT 19:
Recalculation due to Article 12(3): Nineteen European TSOs had their tariffs recalculated within tariff periods since 2021

Between 2021 and 2023, twenty-three European TSOs did not re-adjust tariffs in the middle of a tariff period. In contrast, nineteen TSOs recalculated their charges since 2021, which means that they had to conform with Article 12(3) quoted in the previous section.

The nineteen TSOs updated their tariffs after the start of their tariff period – mostly due to a market area merger in Germany and exceptional circumstances in connection with the Russian invasion of the Ukraine. The following is a more in-depth overview of the reasons for this tariff update:

The German TSOs were merged into a single entry-exit system, to set up **Trading Hub Europe**, merging the former GASPOOL and NetConnect Germany market areas. Due to this, the tariffs were recalculated.[30]

- Recalculation of tariffs due to exceptional circumstances – TAR NC Art. 12(3b): In November 2023 the tariffs of the German TSOs were also allowed to be recalculated for the year 2023 in accordance with the decision of the national regulatory authority (Bundesnetzagentur). This recalculation was granted due to circumstances connected to the Russian invasion of the Ukraine and its impact on gas flows.[31]
- Recalculation of tariffs due to exceptional circumstances – TAR NC Art. 12 (3b): The tariffs of a Baltic TSO were also allowed to be recalculated.
- Derogation: Two derogated TSOs recalculated their tariffs as necessary adjustments within the tariff period.
- Two TSOs recalculated their tariffs due to other reasons, namely to return over-recoveries from the regulatory account.

The number of re-adjustments of tariffs has minimally risen in comparison to the 2022 report from 18 to 19 cases. The number of cases in the 2024 report consists mostly of the market merger in Germany *(which is counted in the 2022 report as well)* and the impact of the energy crisis due to the Russian invasion of the Ukraine and changes in gas flows in Europe. However, even if the market merger in Germany would be counted out in this report, the number of tariff adjustments would stay the same as the German TSOs had a tariff recalculation in 2023 due to the mentioned exceptional circumstances.

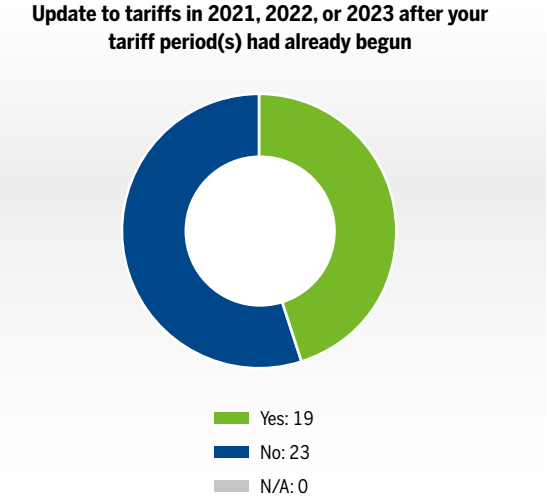


Figure 27: Since 2021, 19 European TSOs adjusted their tariffs after the start of their tariff period

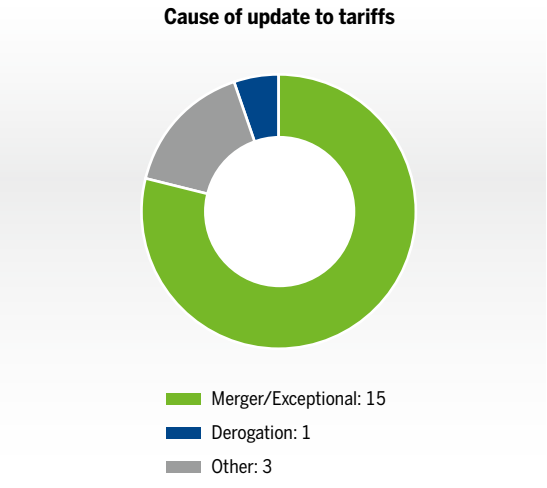


Figure 28: Reasons for updates to tariffs during running tariff period

30 Since the implementation of the TAR NC, several mergers have taken place in Europe and have affected tariffs.

31 Please see the decision of the Bundesnetzagentur **here** (BK9-22/615), in German.

4.2.3.2 'Level of multipliers and seasonal factors' Article 13

Multipliers aim to incentivise shippers to book long-term capacity, whilst **seasonal factors** aim to foster efficient system use by allowing higher reserve prices in months with high utilisation rates, and lower reserve prices in low-utilisation months. The TAR NC defines the ranges for the respective multipliers[32] and a detailed methodology for calculating seasonal factors, if the TSO/NRA takes the option to apply these components.

INSIGHT 20:
Thirty-seven TSOs comply with quarterly and monthly multiplier rules at IPs

Based on TSOs' feedback, compliance with TAR NC rules for quarterly and monthly multipliers is very high across Europe. **Thirty-seven TSOs were applying the range from 1.0 to 1.5** for these capacity products as of 1 October 2023.

Beside these 37 TSOs, there are also **duly justified exceptions**:

- Two TSOs indicated they hold a **derogation**, which enables them to depart from the TAR NC range regarding quarterly and monthly multipliers.
- Three other TSOs indicate that they have **no IP** on their network.

The level of compliance is fully comparable to the 2022 report results.

INSIGHT 21:
Thirty-six TSOs comply with daily and within-day multiplier rules at IPs

Regarding daily and within-day multipliers at IPs, **European TSOs also display high compliance with TAR NC rules**.

Compared to quarterly and monthly multipliers, the TAR NC gives more flexibility to apply daily or within-day multipliers outside the default range.

Thirty-six TSOs were applying the default range from 1.0 to 3.0 for these capacity products at IPs, as of 1 October 2023.

Compared to quarterly and monthly multipliers, for daily and within-day multipliers the TAR NC allows for **deviations from the default range** *'in duly justified cases':*

- One TSO was **outside the default range** – but the NRA provides a justification for this case.
- Two TSOs stated that they hold a **derogation** from these specific TAR NC provisions (in the same way they hold derogations for quarterly and monthly multipliers).
- Three other TSOs mentioned that, since they have **no IP**, this question is irrelevant for them (i.e., N/A).

The level of compliance is fully comparable to the 2022 report results.

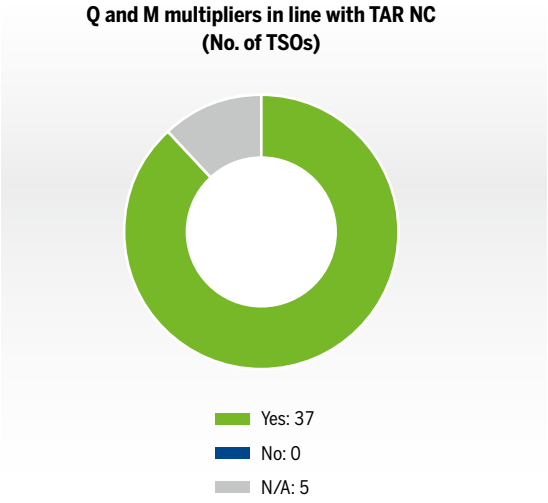


Figure 29: As of 1 October 2023, 37 European TSOs were applying TAR NC rules for quarterly and monthly multipliers

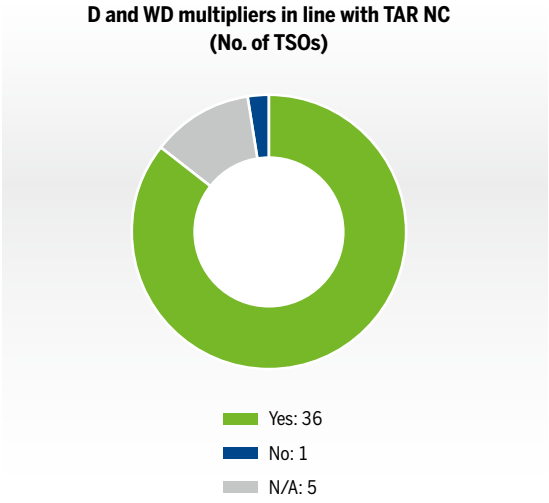


Figure 30: As of 1 October 2023, 36 European TSOs were applying TAR NC rules for daily and within-day multipliers

32 For quarterly standard capacity products and for monthly standard capacity products, the level of the respective multiplier shall be no less than 1 and no more than 1.5. For daily standard capacity products and for within-day standard capacity products, the level of the respective multiplier shall be no less than 1 and no more than 3. In duly justified cases, the level of the respective multipliers may be less than 1, but higher than 0, or higher than 3.

INSIGHT 22:
All TSOs using seasonal factors at IPs are compliant with TAR NC rules on value ranges

Based on Article 13(2) of the TAR NC, the arithmetic average of the combination of multipliers and seasonal factors over the gas year and for each standard capacity product shall be within the range defined in the TAR NC for multipliers applicable for each product. In the data set of European TSOs, **only nine TSOs use seasonal factors**, and they stated they were compliant with this rule.

No TSO using seasonal factors reported non-compliance with the TAR NC rules for values of the combined multipliers and seasonal factors. **Thirty-three European TSOs replied 'N/A' to this question** for various reasons: because they do not use seasonal factors, or they have a derogation, or they have no IP, or they use the implicit allocation mechanism.

This compliance is fully comparable with the results of the last report, where also all TSOs who used seasonal factors stated that they were compliant with the rules laid out in the TAR NC.

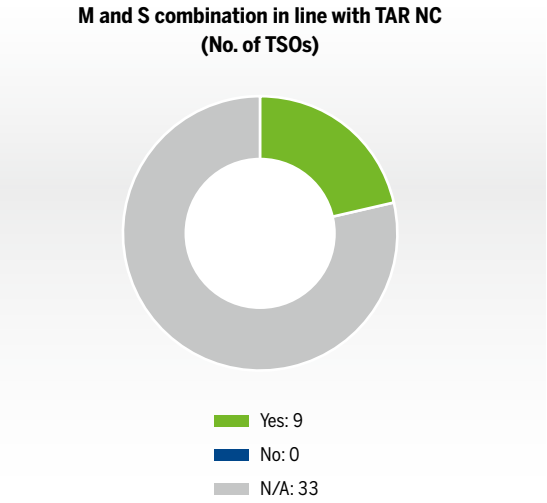


Figure 31: Each of the nine TSOs using seasonal factors stated they follow TAR NC provisions on multipliers and seasonal factors

4.2.3.3 'Calculation of reserve prices for non-yearly standard capacity products for firm capacity with seasonal factors' Article 15

A seasonal factor can be applied in combination with the multiplier. However, the same ranges apply to the arithmetic average of the combination of multipliers and seasonal factors over the gas year – see Article 13(1) TAR NC stating the ranges for products and 13(2) applying this to seasonal factors. Where seasonal factors are applied, the reserve prices for non-yearly standard capacity products for firm capacity shall be calculated in the same way as the calculation of reserve prices for non-yearly standard capacity products for firm capacity in absence of seasonal factors, which shall then be multiplied by the respective seasonal factor.

Article 15(2) of the TAR NC stipulates that the methodology to calculate seasonal factors should be based by default on the cost driver of forecasted flows. If the quantity of the gas flows equals zero at least for one month, the methodology should be based on the cost driver of forecasted contracted capacity. The methodology of calculation is laid out in Article 15(3) of the TAR NC.

INSIGHT 23:
Eight TSOs applying seasonal factors use forecasted flows as their cost driver

According to information provided by TSOs, **forecasted flows are indeed the driver used to calculate seasonal factors** for the majority of TSOs using seasonal factors – with eight out of nine TSOs using forecasted flows as drivers. The remaining TSO uses forecasted contracted capacity.

The **remaining 33 European TSOs replied that the topic is not applicable to them (N/A)** for the same reasons as for the previous topic on seasonal factors (no use of them, derogation, no IP, or implicit allocation mechanism).

The results of this insight are very much comparable to the 2022 results, with a slight rise in TSOs using forecasted flows as a driver (8 TSOs in the 2024 report in comparison to 7 TSOs in the 2022 report). The number of TSOs using forecasted contracted capacity stayed exactly the same.

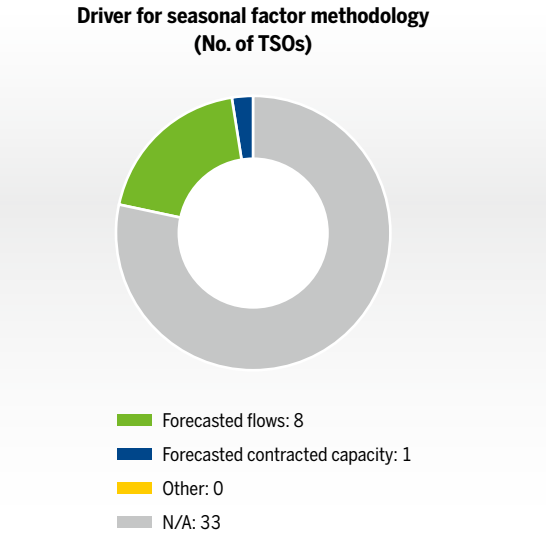


Figure 32: Forecasted flows are mentioned by eight European TSOs as a driver for their seasonal factor methodology

4.2.3.4 'Calculation of reserve prices for standard capacity products for interruptible capacity' Article 16

Reserve prices for interruptible capacity products get discounts:

- An **ex-ante discount** is calculated upfront, based on the formula set out in the TAR NC Article 16(2), using the probability of interruption and the estimated economic value of the product.
- An alternative to using an ex-ante discount is an **ex-post discount**, described in Article 16(4). It constitutes compensation paid to network users after the actual interruption has occurred. Such a discount is an option which is only available if physical congestion did not prompt any interruption in the preceding gas year.

Ex-ante and ex-post discounts are not mutually exclusive; the TAR NC does not prohibit the use of both types of interruptible discounts by the same TSO (e.g., at different IPs).

INSIGHT 24:
Ex-ante discounts are the most frequent type of interruptible discounts (almost 75 % of TSOs)

The following chart shows that **31 TSOs apply ex-ante interruptible discounts**, following the standard approach presented in the TAR NC. The alternative approach of ex-post discounts is used by three TSOs. Four TSOs use both ex-ante and ex-post interruptible discounts.

Also, **four TSOs indicated that the question of the type of interruptible discounts is not applicable** for them ('N/A') since they have no IP, they use the implicit allocation mechanism, or they do not offer interruptible products. In comparison to the 2022 report, the number of TSOs applying the ex-ante interruptible has risen from 29 to 31 in the 2024 report. The number of TSOs using the ex-post discount has decreased from 7 in the 2022 report to 3 in the current report.

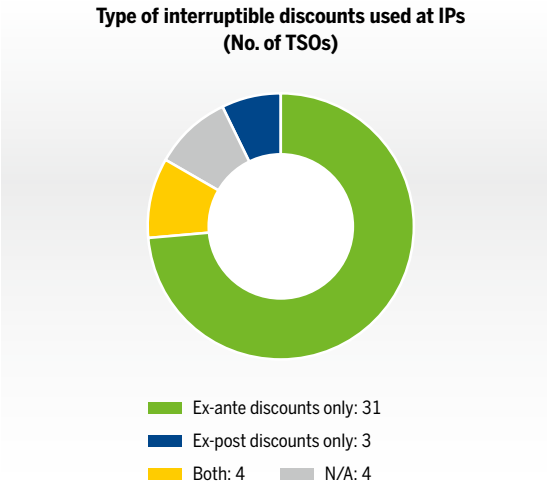


Figure 33: Thirty-one European TSOs apply ex-ante interruptible discounts at IPs

INSIGHT 25:
Value of interruptible discounts: 60 % of TSOs which have the discounts adjust their value depending on IP. 40 % of concerned TSOs keep the same discount for all IPs.

When looking at the sample of TSOs that offer discounts for interruptible products at IPs, 60 % of TSOs adjust the discount. 40 % of the TSOs, which have the discounts, keep the same interruptible discounts at all IPs (or have only one IP on their network).

The remaining five TSOs, which replied 'N/A', pointed out that they have no IP on their network, or they don't offer interruptible products.

The results of this insight are generally comparable to the findings of the 2022 report – however, the number of TSOs not applying different values at different IPs has fallen from 19 TSOs to 16 TSOs in this report.

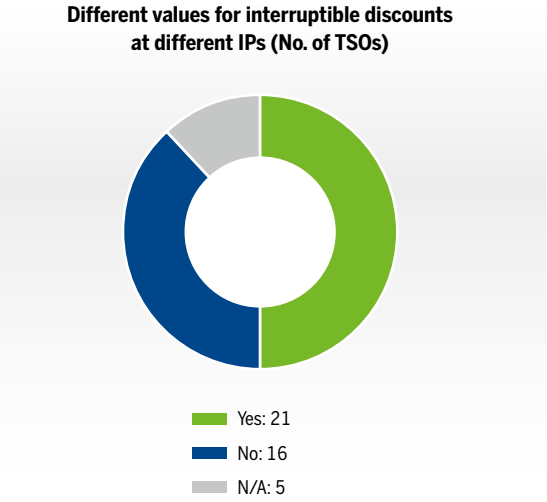


Figure 34: Interruptible discounts are adapted by 21 European TSOs depending on the IP

4.2.4 TAR NC – CHAPTER IV – RECONCILIATION OF REVENUE

4.2.4.1 'General provisions' Article 17

Price cap and non-price cap are types of regulatory regimes, and the possibility of revenue reconciliation is conditional to the regulatory regime of TSOs.

- **Under a price cap regime**, the maximum transmission tariff based on revenue is set, and the TSO bears a volume risk since its revenue will not be reconciled, whether high or low volumes and capacity bookings are made by network users. This said, in practice a target revenue is decided by the NRA to mention the expected revenue of the TSO, based on the price cap and the expected volumes and bookings.
- **Under a non-price cap regime** – such as the revenue cap, rate-of-return, and cost-plus approaches – the allowed revenue for the TSO is set and revenue reconciliation is generally applied[33].

The questions for this TAR NC article focus on TSOs functioning under a non-price cap regime. These questions are not applicable for TSOs under a price cap regime, since they have no revenue reconciliation.

INSIGHT 26:
More than 90 % of European TSOs who answered operate partly or fully under a non-price cap regime

In Europe, nearly all **TSOs operate under a non-price cap regime[34], mostly with a revenue cap**. Sometimes, they show features of mixed regulation, i.e., including traits of price cap regulation as well. This means that most gas TSOs function with an allowed revenue validated by their respective NRA, and benefit from a reconciliation mechanism, where any under- or over-recovery is cleared in the following years.

TSOs which don't display any feature of a non-price cap are the exception – three TSOs fall in this category in our report. Two of them are merchant TSOs with no allowed or target revenue, one TSO operates under a price cap regime.

The models of TSOs have stayed very similar to the results of the 2022 report – however, the number of TSOs under a full price cap has decreased from two to one TSO in the 2024 report.

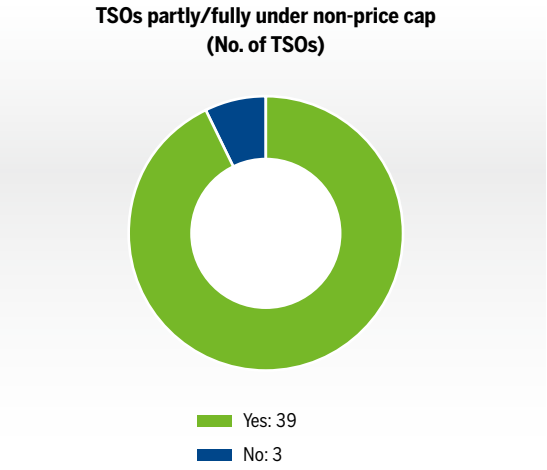


Figure 35: Nearly all TSOs operate under a non-price cap regime. Only three European TSOs are operated either as merchant TSOs or under a full price cap regime

INSIGHT 27:
A majority of TSOs reconcile revenue over a period of one to three years

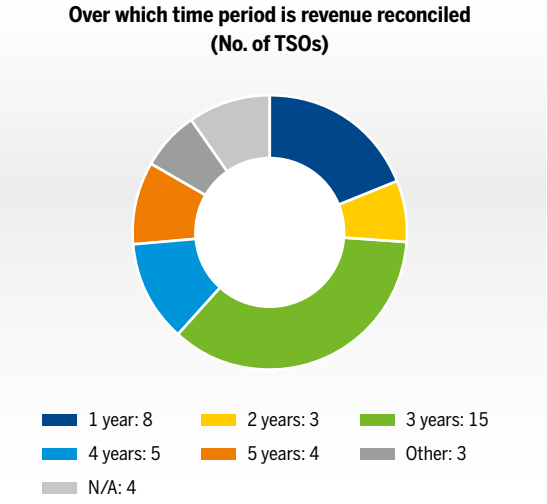


Figure 36: Revenue reconciliation is performed by 26 TSOs over a period of one to three years

As for the period over which revenue is reconciled, different approaches exist in Europe. The most frequent answers are one year and three years *(eight TSOs saying they reconcile over one year, and fifteen TSOs saying they use a three-year reconciliation period)*. Periods of two, four, or five years are less frequent but also applied – also there

33 However, one European TSO said they are regulated under a rate-of-return regime without revenue reconciliation.

34 Explained in TAR NC Article 3(3): *'non-price cap regime' means a regulatory regime, such as the revenue cap, rate of return and cost plus regime, under which the allowed revenue for the transmission system operator is set in accordance with Article 41(6)(a) of Directive 2009/73/EC.'* Please see Article 3 of TAR NC for an overview of definitions and models.

is the case of 'Other' meaning that the reconciliation period is not an integer, or special rules apply for the reconciliation period.

For four TSOs, the answer to this question was 'N/A' since they are not concerned by reconciliation mechanisms – as they are merchant TSOs under a price cap regime, or under a non-price cap regime but without reconciliation.

In comparison to the findings of the 2022 report, the number of TSOs utilising a one-year reconciliation period has dropped significantly – from 15 TSOs to eight TSOs in the current report. The number of TSOs utilising a three-year period has stayed exactly the same. Also most TSOs in the 2022 report utilise a reconciliation period from one to three years.

INSIGHT 28:
Among TSOs with a revenue reconciliation process and offering Non-Transmission Services, the majority of TSOs use a separate account for reconciliation of these services

Not all TSOs apply a revenue reconciliation mechanism (as shown in Insight 27). In addition, not all TSOs offer Non-Transmission Services (as shown in Insight 3). When these two aspects are considered together, i.e., how to reconcile revenue from Non-Transmission Services, **18 European TSOs indicate that this question is not applicable for them** since they either have no revenue reconciliation and/or offer no Non-Transmission Services.

For the other TSOs, **the pattern is mainly in favour of a separate reconciliation of Non-Transmission Services. As 15 TSOs use a separate account**, distinctly from the reconciliation of revenues derived from Transmission Services (TSs). Nine European TSOs reconcile Non-Transmission Services in the same regulatory account as TSs.

The underlying idea behind a separate reconciliation is that the Transmission Services revenues are collected from all network users because of the very nature of this transmission activity. In contrast, the Non-Transmission Services revenues are collected from specific users, since not all network users typically use these services. **The objective justifying a separate account is therefore often to limit cross-subsidies between users.** The number of TSOs using a separate or same regulatory account is the exact same number as in the 2022 report – so we see no changes here.

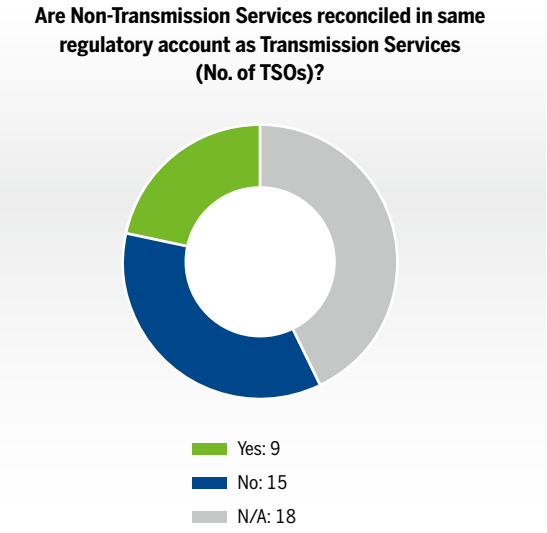


Figure 37: Fifteen European TSOs use a separate account to reconcile revenues from Non-Transmission Services

4.2.4.2 'Regulatory account' Article 19

For TSOs using a regulatory account, it shall indicate the under-/over-recovery of the transmission services revenue for a given tariff period and may include other information, such as the difference between the anticipated and the actual cost components. Following TAR NC requirements, each TSO using a regulatory account shall use just one.

Subject to a decision by the NRA, the **earned auction premium**, if any, **may be attributed to a specific account separate from the regulatory account**. According to Article 19(5) of the TAR NC, the NRA may decide to use this auction premium for **reducing physical congestion** or, where the TSO functions under a non-price cap regime, to **decrease the transmission tariffs** for the next tariff period(s).

INSIGHT 29:
23 European TSOs used auction premia to reduce tariffs, one TSO used them to reduce physical congestion

Based on CAM NC principles, if demand is higher than capacity offered at an IP, **an auction premium will be added to the reserve price** to reach the clearing price[35] where demand equals supply. But when there is little physical or contractual congestion, it is likely there will be no auction premium.

35 Please see Article 17 'Ascending clock auction algorithm' of the CAM NC for insights on how auctions function.

Twenty-three TSOs indicated that any premium will be only allocated to reduce TSO tariffs in the next period. One TSO explained that the premium will be used to reduce physical congestion only. Three TSOs clarified that the premium would serve for both purposes, i.e., alleviating physical congestion and reducing TSO tariffs in the next period. Four TSOs mentioned 'other' uses, either because of their merchant nature, or because they redistributed auction premia to network users in proportion to volumes delivered to end customers in past years.

The remaining eleven TSOs responded 'N/A' for various reasons: they had no auction premia since 2019, or they have no IP, or they have a derogation.

The use of auction premia and ratios for their usage are comparable to the results of the previous report – with a slight decrease in usage for 'Decrease physical congestion' from two TSOs in the 2022 report to one currently, and a slight increase in 'Decrease tariffs next period' from 21 TSOs to 23 TSOs in this edition.

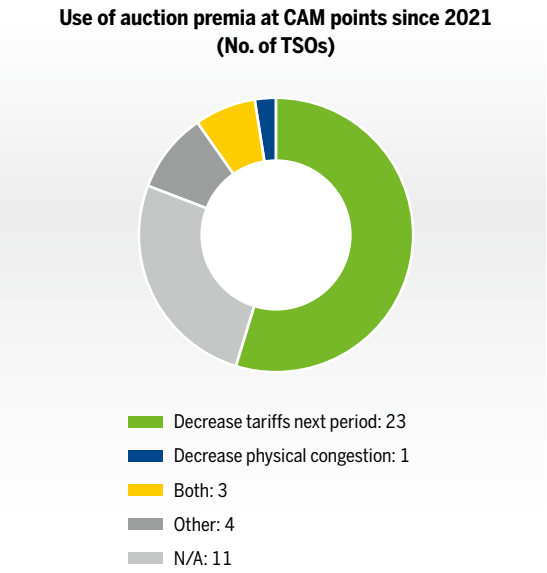


Figure 38: Auction premia are used to decrease tariffs in the next tariff period according to 23 European TSOs

4.2.5 TAR NC – CHAPTER V – PRICING OF BUNDLED CAPACITY AND CAPACITY AT VIPS

4.2.5.1 'Pricing of bundled capacity' Article 21

The **reserve price** for a bundled capacity product shall be equal to the sum of the reserve prices for the capacities contributing to such product. The **auction premium** is the difference between the clearing price and the reserve price in an auction.

The auction premium originating from the bundled capacity product sales shall be attributed in accordance with the **agreement between the respective TSOs and approved by the NRAs**, following TAR NC provisions *(Article 21(3) TAR NC)*. The approval must be granted no later than three months before the start of the annual yearly capacity auctions. In absence of an agreement and NRA approval, the TSOs shall split the auction premium equally (this is what we call here the *'default rule'* as it is valid in all cases of no agreements and approvals).

INSIGHT 30:
Twenty-six European TSOs follow the default rule concerning bundled capacity premia, i.e. a 50 % – 50 % split of auction revenues among concerned TSOs

The majority of TSOs use the default rule, which means to split IP auction premia for bundled capacity equally in a 50:50 manner. Six TSOs said they have a dedicated agreement with the neighbouring TSO concerning the splitting of auction premia. Two TSOs indicated that they use both approaches (equal sharing and specific agreement) depending on the border. Eight TSOs answered that the question is not applicable for them for various reasons: for example they have no IP, or they don't offer bundled capacity.

The results of this question are comparable with the results of the last report, with a slight rise of usage of the default rule (rising from 25 TSOs to 26 TSOs) and a decrease of TSOs using the agreement with the neighbouring TSOs (falling from nine TSOs to six TSOs currently).

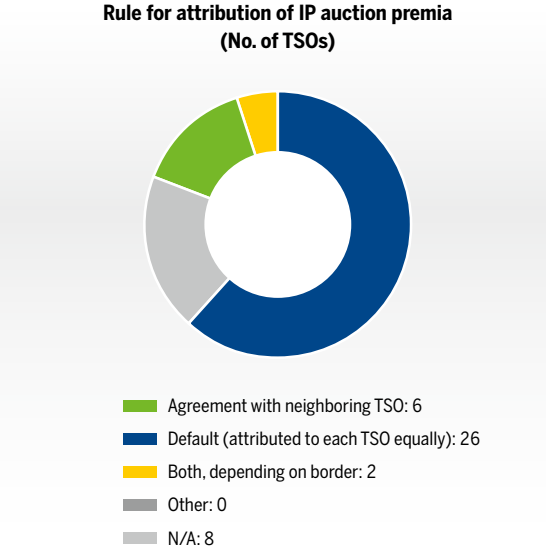


Figure 39: Twenty-six TSOs stated that the revenues collected from IP auction premia are distributed to each TSO equally

4.2.5.2 'Pricing of capacity at a virtual interconnection point' Article 22

Two approaches can be used to calculate reserve prices for unbundled capacity products offered at a Virtual Interconnection Point (VIP), based on TAR NC requirements:

- The first approach is based on the **reference price of the VIP**, where the applied RPM allows for considering the established VIP in calculations. The reserve price of the VIP is derived-from its own reference price *(see Article 22(1a) for this method)*.
- The second approach, where the applied RPM does not allow for considering the VIP in calculations, the reserve price of the VIP is equal to the **capacity-weighted average of the reserve prices for each IP** contributing to the VIP *(See Article 22(1b) for this)*.

INSIGHT 31:
VIP tariffs are defined by most TSOs using the reference price of the VIP itself

When TSOs offer capacity at a VIP, **in most cases the product is offered with a tariff derived from the reference price of the VIP itself – 21 TSOs use this approach**. It means that the RPM used to calculate tariffs for these TSOs allows for the calculation of the capacity tariff of this specific VIP, along with other network points.

The question of rules for VIP tariffs was simply **not applicable for 18 TSOs**, for the following reasons: they had no VIP, or they used the CAM NC implicit allocation mechanism.[36]

Three TSOs said that their VIP tariffs followed the weighted average of reserve prices of the IPs which made up their VIPs, because their RPM did not consider VIPs directly in calculations.

Compared to the results of the last report, we see a slight rise in the usage of 'VIP reference price' to calculate the VIP tariffs – the number rising from 19 TSOs to 21 TSOs in this edition. The number of 'N/A' answers from TSOs has decreased comparably from 23 in 2022 to 18 in this report.

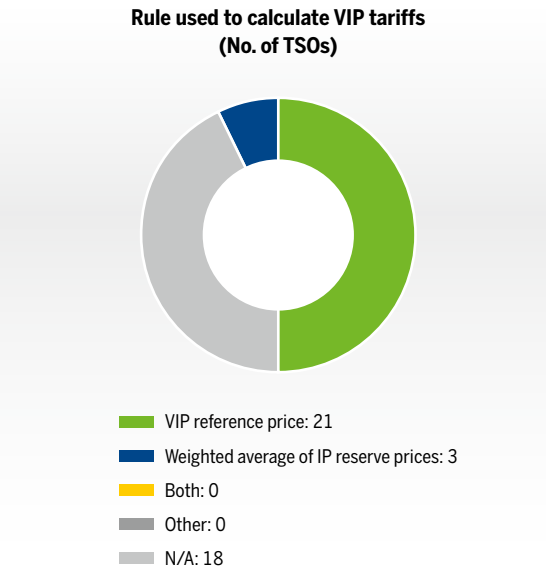


Figure 40: Among concerned TSOs, 21 European TSOs stated that VIP tariffs are directly calculated via VIP reference prices

4.2.6 TAR NC – CHAPTER VI – CLEARING PRICE AND PAYABLE PRICE – ARTICLE 23, 24 AND 25

For payable price at IPs, there are two approaches the TSOs can take: fixed or floating.

- **Under the floating payable price**, the reserve price of the standard capacity product that will be paid may differ from the reserve price valid when the auction takes place, because this reserve price is 'floating'. It can be adjusted, e.g., to adapt to evolutions of the allowed revenue. For yearly products, the reserve price to pay will only be known with certainty before the annual yearly auction that takes place prior to the gas year when the product is valid.
- **Under the fixed payable price approach**, the price of the product at the time of the auction will be adjusted via an index, according to a formula which is known to network users at the time of the auction. The type of index used as a coefficient for the reserve price is also known, however the actual index value for the specific capacity product will be known only when it is published closer to the validity period. A risk premium may be also a component of the price, as it is the cost for guaranteeing that price will not 'float'.

36 See CAM NC Article 3(6) for a definition and more details.

Conditions for using floating or fixed payable prices are set out in Article 25 of the TAR NC. They are closely related to the type of **regulatory regime** – price cap or non-price cap – applicable for each TSO.

INSIGHT 32:
Floating payable price is the most frequent approach at IPs, with 34 TSOs using this method

There is a **strong prevalence of the floating payable price at IPs**, with 34 TSOs using only this approach, and one additional TSO using fixed payable price as well. Four TSOs use fixed payable prices only. Three TSOs clarified that the question of payable price at IPs was not applicable for them since they have no IP.

These results are very similar with the findings of the last report.

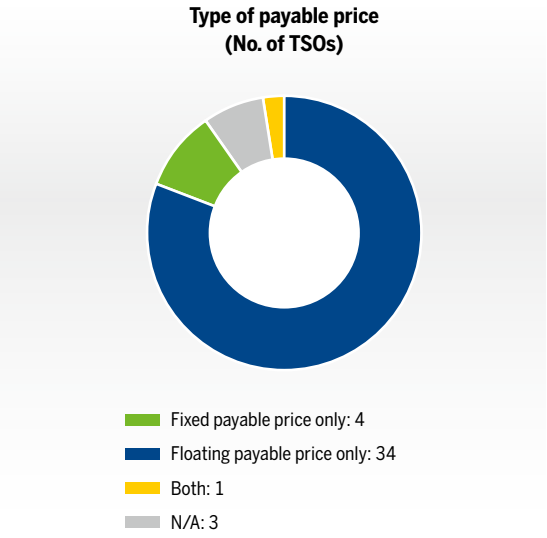


Figure 41: Floating payable price is applied by 34 European TSOs

4.2.7 TAR NC – CHAPTER VIII – PUBLICATION REQUIREMENTS

The responsibility to publish the information listed in Article 30 of the TAR NC, on 'Information to be published before the tariff period', can lie with either the TSO or the NRA, as decided by the NRA.

Information to be published may be broken down into four blocks:

(1) **methodology parameters** related to technical characteristics of the transmission system;

(2) **TSO revenue information;**

(3) **transmission and non-transmission tariffs** which are not published before the annual yearly capacity auctions; and,

(4) **additional information related to tariff evolution**. Such information needs to be published for all points on the network.

The aim of Article 30 is to promote transparency and certainty for the network users by allowing them to understand how the tariffs are calculated and enabling them to recreate the calculations themselves.

Annex B in this report contains links to tariff publications for each TSO (although it should be noted that, for some MSs, the responsibility for such publications can rest with the NRA).

INSIGHT 33:
Responsibility for tariff period publications – majority of publications is done by TSOs

Concerning the responsibility of publication of specific information before the tariff period, generally TSOs take this on. Around 66 % of publications is made via the TSOs, the rest is generally made by the NRAs.

In accordance to the received data 28 TSOs were in charge of publishing information prior to the tariff period. In contrast, for 13 TSOs their NRAs decided to publish information themselves. There is no case of split responsibility for tariff period publications with TSO and NRA together. One TSO pointed out they were granted a derogation on this topic, hence this question was not relevant for them.

Compared to the results of the last report, these findings are very much comparable – one thing to note was that in the last report, there was one split responsibility, which does not exist anymore.

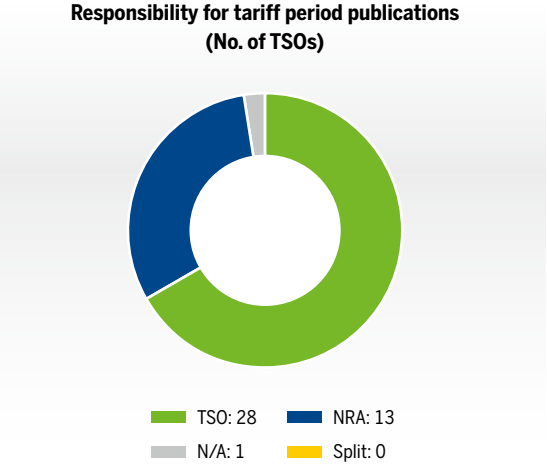


Figure 42: Responsibility for tariff period publications is attributed by NRAs to 28 European TSOs

4.2.8 TAR NC – CHAPTER X – FINAL AND TRANSITIONAL PROVISIONS

4.2.8.1 'Existing contracts' Article 35

Article 35 indicates that the TAR NC implementation should not affect the levels of transmission tariffs resulting from **contracts or capacity bookings concluded before 6 April 2017 where such contracts or capacity bookings foresee no change in the levels of the capacity- and/or commodity-based transmission tariffs (fixed tariffs) except for indexation**. For this report, TSOs were asked if the TAR NC has impacted these existing contracts or capacity bookings.

INSIGHT 34:
Impact of TAR NC on existing contracts: An overwhelming majority of TSOs is not affected. Five TSOs noted that existing contracts were affected.

The TAR NC sets out that existing contracts where capacity or commodity tariffs are fixed and concluded before 6 April 2017 (Article 35(1)) should be protected from possible adverse effects arising from its implementation in MSs. Information received from TSOs clarifies that most TSOs didn't offer such contracts or bookings in practice. **For 22 European TSOs, the answer was therefore 'N/A'** as there were no existing contracts according to the TSOs. 15 TSOs responded that the TAR NC had no impact on existing contracts.

However, five TSOs overall highlighted that the implementation of TAR NC rules had affected existing contracts.

Compared to the last report, this number has slightly risen – statistically a decrease could have been expected as any old contracts run out over time. An interpretation could be a more thorough look or insight into the answer by participating TSOs over time.

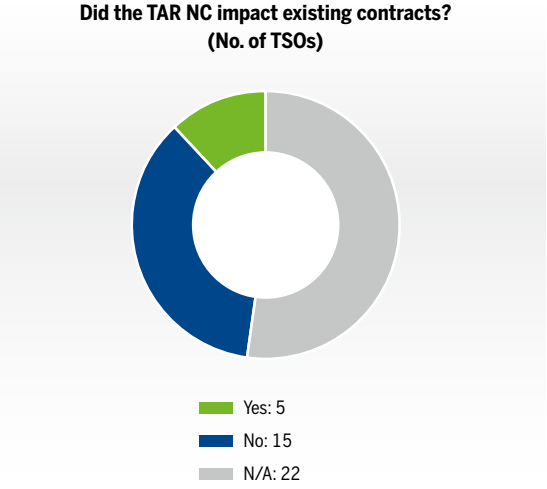


Figure 43: Five European TSOs say they were concerned by the TAR NC impact on existing contracts

4.3 CONCLUSIONS – IMPLEMENTATION MONITORING

The data that ENTSOG collected from TSOs on Implementation Monitoring (IM) gives a picture of the implementation of TAR NC provisions in 2023, which is about four years after all TAR NC provisions became fully applicable. When we look at the progress and implementation stages, with previous editions of this report, TSOs have reached a very high level of application of TAR NC measures and compliance, further closing previous gaps of application.

In the 2020 report we observed that TSOs were already conforming with TAR NC rules even though they were not yet binding. This trend continued in the 2022 report as 'new RPM' rules were applicable for all European TSOs except two. In this edition of the report, all TSOs who answered our questionnaire have moved to the 'new RPM' rules.

In a very minor number of specific cases of derogating from TAR NC rules, NRAs have provided justifications. Overall we can see that TSOs and NRAs have adapted the TAR NC rules with high compliance in a process lasting several years.

We can expect new developments with the finalisation of the Hydrogen and Decarbonised Gas Market Package expected in mid-2024 – including possible changes to the tariffs and discounts of TSOs and the TAR NC. In this spirit, our next edition of our Tariff Monitoring report in 2026 will document and analyse potential new developments.

Picture courtesy of Terranets

4.4 MAIN IMPLEMENTATION MONITORING UPDATES COMPARED TO THE PREVIOUS REPORT

It is interesting to highlight a few significant trends and to mark key differences between the present Implementation Monitoring report and the previous IM report published in 2022.

- **The shift to TAR NC-based rules is nearly finished in all MSs:** Slovakia, who applied some prevailing rules in the last report of 2022, due to a multi-year tariff period, now applies the TAR NC rules. Bulgaria applies the new RPM in an implementation effort, a formal decision of the NRA is still outstanding.
- Concerning **derogations**, Finland and Estonia no longer hold general derogations to the 2009 Directive. Therefore, Gasgrid Finland and Elering sent data for the 2022 and 2024 report.
- **The main findings and how results evolved between reports depend on the specific TAR NC chapters developed in this IM report**[37]**:**

4.4.1 CHAPTER I (GENERAL PROVISIONS):

- Limited scope rules are applied at 3rd country points by a majority of European TSOs – we observe a noticeable increase of TSOs applying these rules in comparison to the last report.
- Non-Transmission Services are proposed by around 65 % of TSOs – this number has stayed stable.
- Around 40 % of TSOs charge a commodity tariff – a ratio comparable to the last edition.
- Forecasted contracted capacity is used by roughly 85 % of TSOs for capacity CAA, a result comparable to the 2022 report.
- Gas flows is the dominant option used for commodity CAA by TSOs who use commodity charges, a result similar to 2022 findings.
- There is good compliance with TAR NC rules on Cost Allocation Assessments (CAAs) to keep in check cross-subsidies.

37 Chapter VII of the TAR NC was not under the focus of the IM questionnaire, to align the approach followed for the previous Monitoring Report, and considering that ACER already performed such monitoring of consultations in 2019. In addition, Chapter IX of the TAR NC was not covered either by the IM questionnaire for this report, since the Demand Assessment Reports for the Incremental capacity process 2021 were already dealing with this activity. Comparison between the new and previous reports is therefore not relevant for these chapters.


Picture courtesy of Teréga

4.4.2 CHAPTER II (REFERENCE PRICE METHODOLOGIES):

- All TSOs who answered use the new RPM rules. This is a progression of the application of RPM rules in comparison to the 2022 report. This progression is due to the end of a long tariff period of one TSO, who shifted to the new rules with the new tariff period, and another TSO taking on the 'new' RPM in an implementation effort with the final decision of his NRA still outstanding.
- The same RPM is used at all network points now for all non-derogated TSOs. This shows high compliance and closes the small gap of application still noticeable in the last report.
- Concerning adjustments to the application of the RPM: rescaling is the most widespread tool used by TSOs, with equalisation on second place, followed by the benchmarking adjustment. This order of application is in line with the findings of the last report.
- Concerning applying the capacity-weighted distance counterfactual, we see a high level of compliance and comparable results with the previous findings.
- Discounts on capacity-based tariffs for storage entry and exit and entry from LNG facilities:

  Storage: We see a rise in the number of TSOs giving a 100 % discount. The majority of discounts given is in the 75 % – 99 % range – above the mandatory 50 % which are asked in TAR NC.

  LNG: For the TSOs connected to LNG facilities, 60 % give a discount. Here we can also see a significant rise in TSOs applying this voluntary discount – increasing from six TSOs in 2022 to ten TSOs in 2024.
- Multi-TSO systems in a single Member State: The countries and number of TSOs in a multi TSO system in a single Member State have changed compared to our 2022 report. A joint RPM application is the only approach used in one-Member-State multi-TSO systems we can monitor; also each TSO belonging to a one-MS multi-TSO system is covered by an ITC mechanism – a data point that has stayed exactly the same as before.

4.4.3 CHAPTER III (RESERVE PRICES):

- Re-adjustment of tariffs in the middle of a tariff period: The number of re-adjustments of tariffs has minimally risen in comparison to the 2022 report from 18 to 19 cases. The number of cases in the 2024 report consists mostly of the market merger in Germany and the impact of the energy crisis due to the Russian invasion of the Ukraine and changes in gas flows in Europe.
- Level of multipliers and seasonal factors – results have stayed very comparable: TSOs have high compliance with TAR NC rules concerning the level of multipliers for each product duration and in combination with seasonal factors. The level of compliance is fully comparable to the 2022 report results. To calculate the seasonal factors, forecasted flows are the driver used to calculate seasonal factors for the overwhelming majority of TSOs.
- Interruptible discounts: In comparison to the 2022 report, the number of TSOs applying the ex-ante interruptible discount has risen and the number of TSOs using the ex-post discount has decreased. 60 % of TSOs which have the discounts adjust their value depending on IP. 40 % of concerned TSOs keep the same discount for all IPs.

4.4.4 CHAPTER IV (RECONCILIATION OF REVENUE):

- Non-price cap regime: More than 90 % of European TSOs who answered operate partly or fully under a non-price cap regime – TSO models stayed very similar to the results of the 2022 report.
- Revenue reconciliation: The majority of TSOs reconcile revenue over a period of one to three years. In comparison to the findings of the 2022 report, the number of TSOs utilising a one-year reconciliation period has dropped significantly – from 15 TSOs to 8 TSOs in the current report. The number of TSOs utilising a three-year period has stayed exactly the same. Also, most TSOs in the 2022 report utilise a reconciliation period from one to three years. Among TSOs with a revenue reconciliation process and offering Non-Transmission Services, the majority of TSOs use a separate account for reconciliation of these services – giving the same result as in 2022.
- Auction premia: Nearly all European TSOs used auction premia to reduce tariffs. One TSO used them to reduce physical congestion. The use of auction premia and ratios for their usage are quite comparable to the results of the previous report.

4.4.5 CHAPTER V (PRICING OF BUNDLED CAPACITY AND CAPACITY AT VIPS):

- Attribution of auction premia: A clear majority of TSOs apply the default rule as per the TAR NC (equal splitting among TSOs) – in line with the 2022 results.
- VIP tariffs are defined by a majority of TSOs using the reference price of the VIP itself – we see a rise in TSOs using this approach. Over time, we can see a trend here. In the 2020 report TSOs with VIPs often used the weighted average tariff of individual IPs, in the 2022 report most TSOs with VIPs used the tariff directly derived for the VIP through their RPM. This number has now risen even further in the 2024 report. This may illustrate the development of VIPs in recent years, and their growing status in TSO pricing, as they supersede the individual IPs they are made of in booking auctions.

4.4.6 CHAPTER VI (CLEARING PRICE AND PAYABLE PRICE):

- Floating payable price is the most frequent approach at IPs, with fixed payable price in the minority. This reflects the conditions set by the TAR NC, with clear limitations for the possibility of using fixed payable price, it shows the compliance of the TSOs, and it is in line with the 2022 results.

4.4.7 CHAPTER VIII (PUBLICATION REQUIREMENTS):

- Responsibility for tariff period publications: the majority of publications is made by TSOs.
- The results are consistent with the 2022 report.

4.4.8 CHAPTER X (EXISTING CONTRACTS):

- Impact of TAR on existing contracts: The overwhelming majority of TSOs is not affected. Five TSOs noted in our questionnaire that existing contracts were affected.
- The ratio of impact can be compared with the results in the last report.

Picture courtesy of Astora

5 EFFECT MONITORING

5.1 INTRODUCTION AND PURPOSE

The analysis of the effects of the TAR NC is an ENTSOG task set by the European regulation, but also a way to study how the rules set out in this Network Code affect the harmonisation of transmission tariff structures across the Member States of the European Union and the benefits that its implementation brings to the market.

The first monitoring of the effect of the TAR NC was performed in 2018 on 2017 data, becoming the baseline. The second and third reports were based on 2019 and 2021 data, and they were published in 2020 and 2022 respectively. This new report published in 2024 is based on 2023 information, and it benefits from comparisons with the three previous issues.

It is also possible to assess if and to what extent the TAR NC has impacted the gas market, and, in return, **whether the European gas crisis which started in 2021–22 is visible** in data and impacted the European gas TSOs.

The scope of the Effect Monitoring (EM) indicators is broadly the same in this 2024 report as in the 2022 edition. ENTSOG requested information from TSOs on five indicators – described *infra* – which analyse the effect of the implementation of the TAR NC. **In total, ENTSOG received 42 answers regarding the EM indicators**[38].

For the Effect Monitoring part, TSOs' data is aggregated and anonymised with an identification number – this number does not correspond to numbers given in the last report.

38 Responses from two TSOs were received from another TSO. It means that 42 responses were received, covering 44 TSOs in Europe.

5.2 ANALYSIS OF RESPONSES – EFFECT MONITORING

The data used in this report has been collected through a survey completed by ENTSOG's Members and Associated Partners, as well as a few other TSOs. A complete list of the participants is enclosed in **Annex A**, and details about participation and derogations can be found in **section 3 above**.

Following ACER's proposals in 2021 for the 2022 report, ACER made new suggestions in 2023 which have been taken into consideration when drafting the indicators for this 2024 report.

The detailed description of each indicator, as well as the results obtained, are provided in the following section[39].

5.2.1 TAR.1: RATIO OF UNDER-/OVER-RECOVERIES TO ALLOWED/TARGET REVENUES

5.2.1.1 Description of TAR.1

This indicator considers under-/over-recoveries as a measure of the relative level of actual revenues compared to allowed/target revenues[40].

5.2.1.2 GOAL OF TAR.1

The objective of this indicator is to provide **an assessment of the ratio of TSOs' revenue imbalance compared to their allowed/target revenues**. This ratio, calculated by each TSO, may or may not include non-transmission services, subject to the data available for TSOs.

- If TAR.1 shows a negative value for the recoveries-to-revenues ratio, the level of tariffs did not ensure the recovery of regulated revenues of the TSO[41].
- Conversely, if the ratio has a positive value, there is an over-recovery for this TSO[42].

The under-/over-recovery represents the annual difference between the actual and the allowed/target revenue. In **most non-price cap regimes**, it will be evened out in the following years. However, for TSOs fully regulated under a **price cap regime**, which is the case for just one TSO in Europe[43], there is no future reconciliation. In this special configuration, any under-/over-recovery is for the TSO to bear/benefit.

The TAR.1 indicator only considers the difference between actual revenue and allowed/target revenue for a given year. **It does not consider the TSO-specific arrangements to clear the regulatory account over a specific number of years.**

- This is to avoid TSO-specific regulatory provisions not within the TAR NC framework.
- More specifically, the reconciliation period is variable across Europe for TSOs under a non-price cap and is not a topic discussed by the TAR NC. Hence, it makes more sense to assess the accuracy of tariff-setting to match allowed/target revenue, which obeys the same principle of cost-reflectivity, rather than comparing differing national policies for revenue reconciliation.

The implementation of the TAR NC **may not be the only influence on the evolution of TAR.1.**

- This indicator is also dependent on changes in capacity bookings and flows.
- Therefore, all evolutions should not necessarily be ascribed to the TAR NC[44].

39 Where applicable, **the TSOs have been randomly attributed a reference code, such as 'TSO 1'**. This is to ensure anonymity for the TSOs and to preserve commercially sensitive information. The reference code of each TSO is different for each indicator. Unless stated otherwise, the reference code for a given TSO remains the same for all sub-indicators in an indicator.

40 This indicator was adapted in the 2020 report on 2019 data to focus on the ratio of under-/over-recovery to the allowed/target revenue, regardless of the existence of a regulatory account. Following ACER's suggestion and to further improve transparency, the report published in 2022 on 2021 data considered if Non-Transmission Services were included in calculations, and whether a full or partial reconciliation took place. No further change is made on TAR. 1 in this 2024 report on 2023 data.

41 Any under-recovery of allowed revenues is made up through a corresponding increase in allowed revenues in the following year(s).

42 Any over-recovery of the allowed revenues collected by a TSO is returned to customers via a corresponding reduction in allowed revenues in the subsequent year (or such other period agreed with the relevant NRA).

43 Cf. Insight 26 in the Implementation Monitoring section. It should be noted that Insight 26 mentions three TSOs which are not operated under non-price cap regime. This includes one TSO under price cap and two merchant TSOs.

44 The discussions to follow on TAR.1 results in 2024 on 2023 data will shed new light on this remark, considering that the economic and political situation in recent years may explain them to a certain degree.

5.2.1.3 ASSUMPTIONS FOR TAR.1

- TAR.1 applies in **both non-price cap regimes and price cap regimes**, since the indicator checks relative under-/over-recovery, and not the regulatory account and actual reconciliation of the revenue imbalance (which is only relevant for regulated non-price cap regimes).
- **Non-regulated TSOs were not required to provide data**, since they have no allowed or target revenue, and since revenue is even more a commercially sensitive parameter in their case.
- **This report considers the period comprised between 2013–2022**, even though the TAR NC sets no requirement for information publication for years prior to 2017 (i.e., before the TAR NC's entry into force)[45].

5.2.1.4 CALCULATIONS FOR TAR.1

- The first aim of TAR.1 is to check if the TAR NC implementation may have contributed to increasing stability in yearly revenue recovery for TSOs.
- The second aim of TAR.1, which is a new feature in this 2024 edition, is to monitor whether the impact of the EU gas crisis in 2021–22 is visible in this report.

For each year, the TSO should indicate the ratio of under-recoveries (with a minus sign) or over-recoveries (with a plus sign) to the allowed/target revenue of the TSO. TAR.1 provides an aggregation of TSOs' ratio for each year of the 2013–22 period.

Since the 2022 edition, TAR.1 also clarifies if revenues from **Non-Transmission Services (NTSs)** are included in the revenue imbalance, and if revenue reconciliation is performed fully, partly, or not at all, by each TSO.

5.2.1.5 ILLUSTRATIVE EXAMPLE FOR TAR.1

Table 1 describes the hypothetical over-recoveries (positive figure) and under-recoveries (negative figure) collected each year in the 2013–22 period, compared to the assumed Allowed Revenue of a fictive TSO under non-price cap (set out in the first row (1)), and it shows the corresponding TAR.1 ratio.

- Revenue recovery may or may not include Non-Transmission Services (NTSs) under-/over-recoveries in calculations of the TAR.1 ratio, on a MS-specific basis[46].
- Under-/over-recovery may be partly, fully, or not at all reconciled, on a MS-specific basis.

The fictive TSO gets revenues which are, for most years, rather close to its allowed/revenue[47].

In the EM questionnaire, TSOs were requested to indicate if the revenue from Non-Transmission Services is considered in their calculations for revenue recovery. They were also asked to clarify if reconciliation of revenues is made on a full or partial basis, or not at all.

In the example here, for year 2013 where the total revenue under-recovery is –3 million EUR (MEUR), there would be:

- **Full reconciliation:** if the TSO is entitled by the NRA to recover the 3 MEUR in future years;
- **Partial reconciliation:** if the TSO is entitled to recover less than 3 MEUR in future years;
- **No reconciliation:** if the TSO will not be entitled to recover any amount from the 3 MEUR under-recovery in future years.

45 As far as the values provided by the TSOs are consistent throughout the period 2013–22 and reflect their under-/over-recovery, the data collected can be calculated for each calendar year or for each regulatory year (i.e., a one-year period for which the allowed/target revenue is defined within a regulatory period).

46 This example considers the case where Non-Transmission Services revenues are included in calculations.

47 This is however less the case for the years 2019 in this example, when the TSO over-recovers revenue, and 2022, when it incurs relatively large under-recoveries. By default, these amounts are supposed to be recovered from or given back to users in the case where the TSO is under a non-price cap – which is assumed to be true in this example.

In Million EUR	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Allowed revenue (1)	100	101	103	102	105	103	102	104	109	107
Under-/over-recovery for Transmission Services (TS) revenue (2)	−4	−3	4	0	1	−7	8	4	0	−9
Under-/over-recovery for Non-Transmission Services (NTS) revenue (3)	1	0	−1	2	0	0	1	−1	3	−3
Total under-/over-recovery for TS + Non-Transmission Services (NTS) (4)= (2)+(3)	−3	−3	3	2	1	−7	9	3	3	−12
TAR.1 Ratio (5)=(4)/(1)	−3.0 %	−3.0 %	2.9 %	2.0 %	1.0 %	−6.8 %	8.8 %	2.9 %	2.8 %	−11.2 %

Table 1: An example of calculations for TAR.1 for a fictive TSO

5.2.1.6 RESULTS COLLECTED FROM EU TSOs FOR TAR.1 IN 2023 FOR THIS 2024 REPORT

36 responses were received on indicator TAR.1 regarding at least one year in the 2013–2022 period, and twelve responses were received covering each of the years 2013 to 2022[48].

Figure 44 shows the average of under-/over-recoveries across TSOs in Europe for TSOs which provided some data. Two approaches are used: one, where the TSO allowed/target revenues are used as weightings for under-/over-recovery, the other, **without weightings**[49].

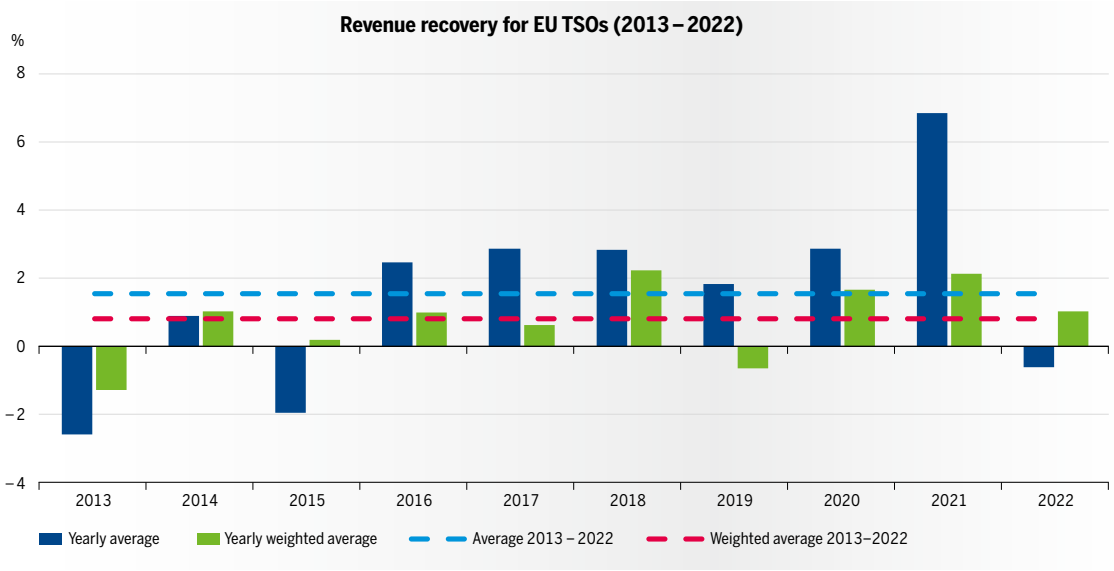


Figure 44: Results for TAR.1 on revenue recovery for EU gas TSOs

48 One key reason put forward by some TSOs not to send an answer was that the data covered corresponds to the period prior to the TAR NC's entry into force in 2017, when publication was not yet mandatory. Another reason is that some TSOs are derogated from some TAR NC rules and will not share data for TAR.1 to protect commercially sensitive information. Besides, in some cases, data for 2022 was not yet fully available when information was collected from TSOs in late 2023.

49 In the case without weightings, the average revenue imbalance is simply the mean of TSO revenue imbalances. In the case with weightings, the amount of TSOs' regulated revenue is used as weighting to take account of the size of the TSO on the imbalances (this is to control the possibility that TSOs with smaller regulated revenues might be more subject to variations in collected revenues). In 2024, a few TSOs revised some of their data for past years, which explains slight differences with past editions. Besides, the panel of TSOs is a little different from the 2022 report, especially due to UK TSOs not participating.

For the 2013–22 period and for all 36 responses on TAR.1, the average yearly over-recovery is +1.54 % if using the simple average approach, and +0.80 % with a revenue-weighted average[50].

- These long-term averages are close to the assessment in the previous report published in 2022 for 2013–20 (the simple average was +1.75 % and the weighted average was +0.98 %)[51]. Based on individual years, the simple European average is comprised between an under-recovery of **−2.6 % (in 2013)** and an over-recovery of **+6.8 % (in 2021)** over the 2013–22 period.
- The yearly revenue-weighted European average is comprised between an under-recovery of −1.3 % (in 2013) and an over-recovery of +2.2 % (in 2018) over the 2013–22 period.

In this 2024 report a changing pattern in revenue recovery is noticeable in 2021 and 2022.

- For the European TSOs **in 2021, the average over-recovery was +6.8 %**, up from +2.9 % in 2020.
- Conversely, **results for the year 2022 show an average under-recovery for European TSOs, with −0.6 %**, down from +6.8 % over-recovery in 2021. It also marks a return to an average under-recovery in Europe, while the average was slightly positive since 2016.
- This **wide year-on-year amplitude from 2020 to 2022** – first up, then down – **had never been observed in previous editions**.

Disaggregating data on revenue recovery in 2021, a very diverse situation in the EU appears, especially for eight TSOs.

- In 2021, 14 of 36 answers indicated under-recoveries, including three answers for TSOs with **under-recoveries significantly more pronounced** than for the others (more than 24 % under-recoveries).
- In contrast, **only five TSOs pulled the average European over-recovery up in 2021** (more than 25 % over-recoveries). Reasons put forth by these TSOs are as follows:
  - **TSO 1** explained that the over-recovery in 2021 (and in 2020) was mainly due to a significant auction premium originated in the LNG terminal entry point that was already returned to consumers.
  - **TSO 2** also mentioned high premia for 2021, in relation to LNG imports as well as at their IPs and storage facilities.
  - **TSO 3** explained high premia at their IPs in 2021, due to physical congestion to adjust to new flow patterns.
  - **TSO 4** noted that high gas consumption in 2021 was the main cause for the over- recovery that year.
  - For **TSO 5** there are no clear reasons.
- **Hence, to explain their high over-recoveries in 2021**, these TSOs point to several factors like high LNG entries, high IP/LNG premia possibly caused by physical congestion, more use of gas infrastructure compared to forecasts, new flow patterns, and the economic recovery after the COVID-19 crisis.
- **It is however not possible to ascribe the revenue fluctuations for each TSO to any specific factor.** The recovery and the gas crisis most likely contributed but it is not possible to give precise roles to each of them. National factors have also played a key role.

50 In terms of weightings, the regulated revenue used for each TSO is by default the revenue for 2022 published in accordance with Art. 30 of the TAR NC. For simplification purposes and due to limitations on data availability, each yearly value is therefore not weighted by the corresponding regulated revenue of the TSO in that year. Considering that the relative regulated revenues of a TSO do not generally incur major changes compared to other TSOs, this method is deemed acceptable.

51 This average level is largely dependent on estimation uncertainties in revenue forecasts, e. g., regarding weather.


Picture courtesy of SGI

Individual results behind the average TSO under-recovery in 2022 also show differences, especially for six TSOs.

- In 2022, 17 of 35 TSOs which replied to this question for this year logged over-recoveries, including **three TSOs with over-recoveries more significant than for the others** (more than 60 % over-recoveries).
- In contrast, **three TSOs remarkably weighed on the average European under-recovery in 2022** (more than 58 % under-recoveries). Reasons put forth by these TSOs are as follows[52]:
  - **TSO 1** explained that a drop in gas consumption in 2022 had followed a peak in gas demand in 2021, which explained their significant under-recovery in 2022.
  - **TSO 2** attributed the significant under-recovery to the drop in IP bookings to flow Russian gas, compared to previous years.
  - For **TSO 3**, there are no clear reasons.
- **Hence, to explain their high under-recoveries in 2022,** these TSOs mention a drop in demand and reduced Russian flows as possible reasons.
- However, here as well, it is not possible to **ascertain the specific role of causal factors**. National reasons were also at work.

At this stage, **it is very important to note that for most TSOs, 2021 and 2022 were however not far from their targets in terms of revenue recovery, and not so different from previous years.**

- In 2021, the central half-group of the EU TSOs around the median TSO registered between −2.3 % under-recoveries and +9.4 % over-recoveries.
- In 2022, the half-group of TSOs at the centre of the distribution obtained between −13.5 % under-recoveries and +12.9 % over-recoveries.

52 The reference codes used for these three TSOs with high under-recoveries in 2022 are different from the reference codes used for the five TSOs with high over-recoveries in 2021 previously mentioned.

This new global pattern is therefore characterised by less homogeneous revenue recovery since 2020 and more TSOs deviating from the revenue objective, even though they remain a minority of TSOs.

- Standard deviation[53] of the revenue recovery ratio sheds light on this **growing heterogeneity in revenue recovery results**: since 2020, standard deviation is above 0.15 and reached 0.35 in 2022. Until 2019, standard deviation was consistently under 0.15.
- **The number of TSOs with pronounced imbalances clearly increased since 2020.** Until 2019, at most three TSOs had imbalances above 25 % in absolute value[54]. From 2020 on, this number gradually rose to five in 2020, seven in 2021, and ten in 2022.

Figure 45 depicts the relatively homogeneous values of the revenue recovery ratio across European TSOs until 2019. **Afterwards, the number of TSOs with ratios of under- or over-recoveries higher than 25 % of their total revenue has moved up.**

The new pattern on gas EU TSO revenue recovery is above all significant for **the pronounced positive and negative imbalances it represented in a limited but growing group of TSOs**, not on the majority of EU TSOs[55].

For the first time since 2015, **the average revenue recovery for EU TSOs is slightly negative in 2022 (−0.6 %)**, while it was slightly positive since then.

A major point to highlight is that TSOs are not structurally earning more or less than their regulated revenue since there is typically a reconciliation in the next few years.

As previously mentioned, **any over-recovery** of the allowed revenues collected by a TSO under a non-price cap regime is returned to customers via a corresponding reduction in allowed revenues in the subsequent year (or such other period agreed with the relevant NRA), except in rare cases.

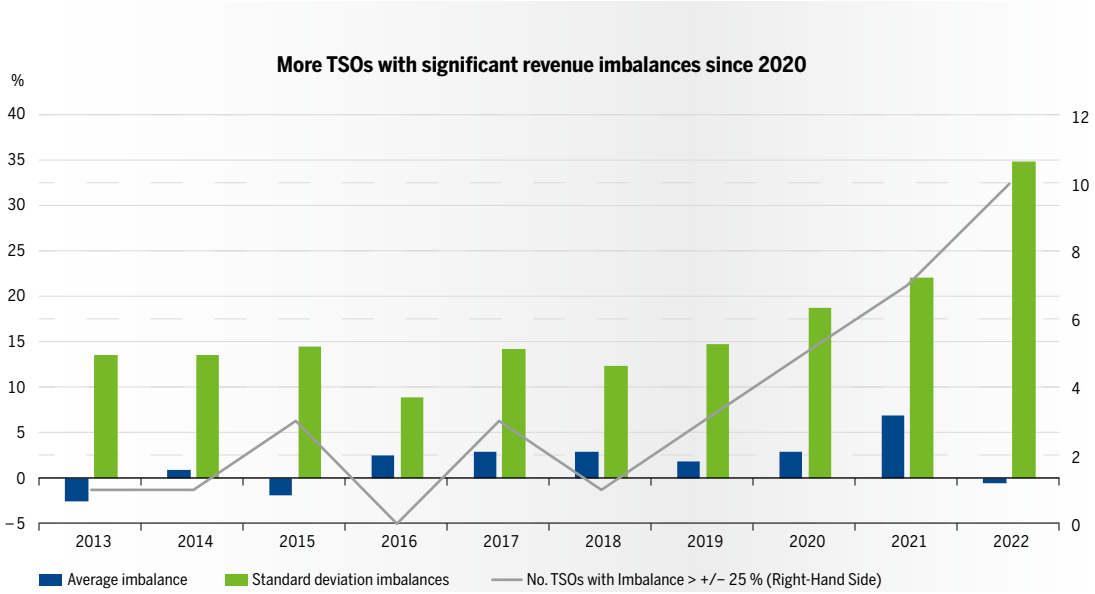


Figure 45: Changing patterns on EU gas TSO revenue recovery since 2020

53 Standard deviation is a statistical measure of the amount of variation of a variable around its mean. For example, let us consider TSO 1, TSO 2, and TSO 3 with respectively an under-recovery of −1, no imbalance (hence 0), and an over-recovery of +1. The average imbalance in this group of TSOs is 0. The standard deviation formula is defined as $\sigma = \sqrt{\left[\frac{1}{N}\sum_{i=1}^{N}(x_i-\mu)^2\right]}$, where x_i=x_1, x_2, ..., x_N are the N values of the variable in the sample, and μ is the mean of the variable. In this example, N=3 and μ=0, therefore $\sigma = \left[\frac{1}{3}[(-1-0)^2+(0-0)^2+(1-0)^2]\right]^{1/2} = \sqrt{\frac{2}{3}} \approx 0.816$. If one assumes now that the distribution of imbalances is much wider around the mean, say −10, 0 and +10 respectively for TSO 1, TSO 2, and TSO 3, the standard deviation soars, which indicates higher dispersion or heterogeneity: $\sigma = \left[\frac{1}{3}[(-10-0)^2+(0-0)^2+(10-0)^2]\right]^{1/2} = \sqrt{\frac{200}{3}} \approx 8.16$.

54 For years before the entry into force of the TAR NC in 2017, TSOs contributed with data on a voluntary basis, since TAR NC provisions were not binding before 2017. For data covering years until 2016, only a limited number of TSOs shared data; after 2017 the panel of TSOs sharing data consistently represented more than 30 TSOs, which is close to the 36 responses received on indicator TAR.1 for this 2024 report. Comparisons therefore look more robust from 2017 to 2024 than for the period prior to 2016.

55 When leaving aside the eight TSOs abovementioned with revenue recovery significantly above or under the rest of the sample in 2021 and the six TSOs in the same case in 2022, the average over-recovery of +6.8 % in 2021 falls to +2.7 %, and the average under-recovery of −0.6 % in 2022 remains stable at −0.6 %.

Conversely, **any under-recovery** of revenues for a TSO under a non-price cap regime is made up through a corresponding increase in allowed revenues in the following year(s). The **under-/over-recovery** represents the annual difference between the allowed/target revenue and the actual revenue. In most non-price cap regimes, it will be evened out in the following years[56].

This 2024 report on 2023 data also considers in indicator TAR.1 whether revenues from Non-Transmission Services (NTSs) are reconciled together with Transmission Services (TSs).

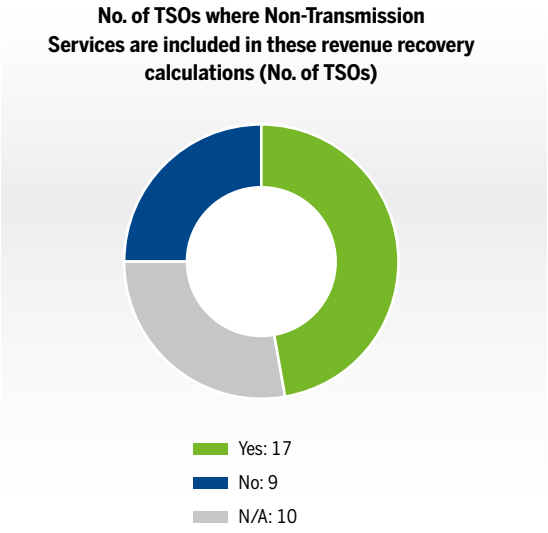


Figure 46: Only 17 European TSOs have included Non-Transmission Services in revenue recovery calculations (TAR.1)

Figure 46 indicates responses from the 36 TSOs which provided data on TAR.1 for this 2024 report. Beside ten TSOs which mentioned this question as N/A (either because they don't reconcile revenues, or because they don't offer Non-Transmission Services), **just under half of TSO respondents (17) clarified they do include Non-Transmission Services in revenue recovery calculations[57]**.

It is also interesting to review whether revenue is fully, partly, or not reconciled for each TSO. Data provided by 36 European TSOs on TAR.1 shows that, apart from one TSO where the question is not applicable because of specific rules[58], **revenue is fully reconciled for 29 TSOs out of 34** according to rules applicable as of 1 October 2023 (cf. Figure 47)[59].

- Hence, under-/over-recoveries are often fully cleared via reduced tariffs (in case of over-recovery) or increased tariffs (in case of under-recovery) in future tariff periods. For six TSOs, the revenue imbalance is only partly reconciled.
- Regarding auction premia, which may contribute to over-recoveries in non-price cap regimes, the NRA may decide if revenues from these premia should serve to reduce tariffs in future years or to invest to alleviate physical congestion, as per Art. 19(5) of the TAR NC.[60] For an overview of how revenues from premia are distributed, please see Insight 29 in the Implementation Monitoring Report.

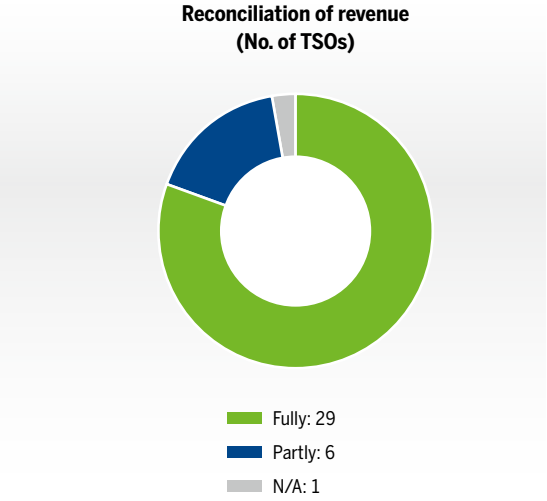


Figure 47: Full reconciliation of revenue is performed by 29 European TSOs (TAR.1)

56 For TSOs fully under a price cap regime or for merchant TSOs, which represent only three TSOs in Europe, there is no future reconciliation. Hence, any under-/over-recovery is for the TSO to bear/benefit. Only one TSO under a non-price cap regime stated that they have no reconciliation in their rate-of-return regulation.

57 This chart is not directly comparable with the topic of Non-Transmission Services reconciliation in the IM part (cf. Insight 28) because the question is different. For TAR.1, the question asks TSOs whether they include Non-Transmission Services in their calculations for revenue reconciliation. For Insight 28 in the IM part, the question was whether TSOs use a separate account to reconcile Non-Transmission Services under-/over-recoveries. Also, eight TSOs preferred not to share data on TAR.1 and are not shown on the pie chart, while these eight TSOs replied to Insight 28, which reduces comparability between the two questions.

58 Among the TSOs responding to TAR.1, a TSO replied that their regulatory regime is a non-price cap regime but does not allow revenue reconciliation.

59 For one TSO with a multi-year tariff period, reconciliation under the TAR NC rules is expected to cover full revenue imbalances, as in the last tariff period, in the absence of any indication it will not. Eight TSOs didn't share data on TAR.1 and are not shown on the pie chart.

60 This question of over-recoveries from auction premia became more relevant in recent months, following changes in flow patterns in North-West Europe, which generated some over-recoveries for some TSOs (cf. also **ACER (2023)**).

5.2.2 TAR.2: CHANGES IN CAPACITY TARIFFS AT ALL TSO POINTS FOR YEARLY PRODUCTS

5.2.2.1 Description of TAR.2

Since the 2022 edition of this report, this indicator **focuses only on capacity-based tariffs**[61].

By this 2024 edition of the report, NRAs are supposed to have validated the shift of all European TSOs to TAR NC rules, because for all European TSOs, the tariff periods prevailing on 31 May 2019 have come to an end no later than 1 January 2022[62]. This implies that **TAR.2 is now supposed to incorporate the full application of TAR NC principles**.

5.2.2.2 Goal of TAR.2

The key objective of TAR.2 is to **consider whether the TAR NC may have an impact on the evolution of average tariffs.**

TAR.2 has also gained additional value in this 2024 report because it seems to have registered some macroeconomic effects on TSOs from the gas crisis started in 2021–22 and from the inflation bolstered by the post-COVID-19 recovery.

TAR.2 covers tariffs for **yearly firm capacity products only**.

- **Since the 2022 edition, commodity charges, where in use by TSOs, are no longer included** in calculations, to avoid issues with averaging together capacity and commodity tariffs expressed in different units.
- The choice of keeping yearly products is justified because, for many TSOs, **yearly bookings still represent a significant share of total bookings**. This is also because tariffs for short-term products are calculated via the application of multipliers on yearly tariffs. Therefore, the evolution of yearly tariffs is taken as a reasonable proxy for the evolution of all tariffs.

61 This indicator gives the yearly evolution rate of the average tariff of each TSO. For the 2022 report, TAR.2 was adapted to focus on variations in capacity tariffs only. The commodity tariffs applied in some MSs were not considered anymore to avoid erroneous tariff averages using different units. Also, with the 2022 edition, TAR.2 mentioned if a change in RPM took place since 2019 and the final application date of the TAR NC. For this 2024 publication, this 2022 addition was simplified to focus on changes only in the 'type' of tariff methodology (e.g., from Postage Stamp to Capacity-Weighted Distance) since 2019, i.e., to verify whether more significant methodological changes than a simple change in parameters had been applied.

62 Article 27(5) of the TAR NC stipulates that the methodology which prevails on 31 May 2019 will still be applied until the end of the tariff period. On 1 January 2022, with the end of the multi-year tariff period applicable on 31 May 2019 in one MS, all MSs are now supposed to comply with all TAR NC provisions.

Picture courtesy of FGSZ

5.2.2.3 Assumptions for TAR.2

Tariff changes are considered **for all TSO points**, by differentiating between entries and exits.

Due to confidentiality requirements, **TSOs are responsible for their own calculations of the average tariff index** for each year and for all the points of the TSO network.

- This index is an average of tariffs for yearly capacity products, as calculated by the TSOs[63].
- The index should ideally be calculated by weighting each yearly capacity tariff with the corresponding share of revenues generated by the capacity product.
- ENTSOG collected data sent by TSOs. Then, year-on-year changes were calculated.

In 2024, as for the 2022 report, TAR.2 only covers the **standard yearly firm capacity products**.

TAR.2 only focuses on previous tariffs, not forecasts.

- The period considered in this indicator covers the years **2013–22**, where 'years' refers to the calendar year from January to December, or the gas year from October to September, or another period which generally corresponds to the tariff period of the TSO.
- It was assumed that, as the reference periods for tariff years are slightly different among TSOs (e.g., calendar year 2015 for TSO A, gas year 2014–15 for TSO B, etc.), this does not significantly undermine the comparability of data among TSOs.

Data is also juxtaposed with inflation numbers collected from the Harmonised Index of Consumer Prices (HICP) of **Eurostat**[64] for calendar years 2013 to 2022, to verify if TSO tariffs evolve at the same pace as general inflation.

5.2.2.4 Calculations for TAR.2

As mentioned in the data collection section above, to evaluate the tariffs changes along the studied period, **the TSOs were requested to provide a tariff index** based on the yearly capacity tariffs.

For each TSO, the tariff index collected for 2013 has been considered as a basis for the calculations of tariff changes for the following years[65].

63 Because of the change in the TAR.2 methodology in the 2022 edition compared to the 2020 edition, TSOs which applied a commodity charge were requested in the 2021 data collection to recalculate averages for past years, to remove the influence of commodity tariffs on tariff averages and to keep consistency with the average for the later years. This explains why results are not directly comparable for some TSOs in this 2024 edition and with reports published prior to 2022. In addition, for this 2024 report, a few TSOs brought corrections to data submitted in the 2022 edition.

64 **Eurostat – Harmonised index of consumer prices (HICP)**

65 If data for 2013 was not available for a TSO, the earliest date for which data was available for this TSO was taken as the base year.

5.2.2.5 Illustrative example for TAR.2

Here is an illustration of possible calculations by TSOs, based on revenue weights[66].

A fictional TSO 1 has the following points to consider and the associated tariffs and share in total revenues for the period to be assessed.

Reference prices (TSO yearly products, e.g. in EUR/(kWh/d)/y)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Point A Entry cap	12	10	11	5	4	8	4	5	6	10
Point B Entry cap	8	9	10	13	14	11	12	13	8	9
Point B Exit cap	6	9	10	11	13	15	14	13	11	14
Point C Entry cap	4	4	2	2	5	8	5	8	7	10
Point C Exit cap	6	5	4	7	8	9	4	6	8	11
Share in revenues collected from yearly products (in %)	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Point A Entry cap	40 %	36 %	31 %	24 %	21 %	17 %	20 %	21 %	16 %	11 %
Point B Entry cap	21 %	22 %	23 %	27 %	28 %	29 %	28 %	25 %	20 %	26 %
Point B Exit cap	11 %	11 %	12 %	12 %	13 %	15 %	16 %	17 %	18 %	21 %
Point C Entry cap	9 %	9 %	9 %	9 %	7 %	5 %	6 %	4 %	5 %	3 %
Point C Exit cap	19 %	22 %	25 %	28 %	31 %	34 %	30 %	33 %	41 %	39 %
Total share of revenues collected from yearly products	**100 %**	**100 %**	**100 %**	**100 %**	**100 %**	**100 %**	**100 %**	**100 %**	**100 %**	**100 %**
Tariff index TSO 1	8.64	8.03	8.09	8.17	9.28	10.26	7.9	8,81	8.17	10.97
Tariff index TSO 1 (base 100: 2013)	100.0	92.9	93.6	94.6	107.4	118.8	91.4	102.0	94.6	127.0

Table 2: An example of reference prices and revenues for TAR.2 on tariff changes

Therefore, the tariff average of TSO 1 will be for example 8.64 for 2013, which is the weighted sum of the products of the tariffs for each point and the revenue share for that point, over all points. Considering that the value for 2013 is the basis (100) for the following years, the tariff index will be 92.9 for 2014[67], 93.6 for 2015, etc., and 127.0 for 2022. Then, year-on-year tariff changes are calculated.

66 However, the tariff index provided to ENTSOG by TSOs may not follow this example, as several definitions of an average are possible. ENTSOG relies on TSOs' expertise to assess the average.

67 Taking account of rounding, this is calculated as $(10 \times 36\,\% + 9 \times 22\,\% + \cdots + 5 \times 22\,\%)/(12 \times 40\,\% + 8 \times 21\,\% + \cdots + 6 \times 19\,\%) \times 100$

5.2.2.6 Results collected from EU TSOs for TAR.2 in 2023 for this 2024 report

In 2023, 42 TSOs[68] sent in data for at least one year in the period 2014–22 regarding indicator TAR.2[69].

The results shown in Figure 48 indicate that the evolution of average tariffs has been broadly aligned on inflation for many TSOs until the post-COVID-19 recovery and EU gas crisis started in 2021–22[70]. **In 2021, and mostly in 2022, a growing disconnect between increased inflation and moderate TSO tariff increases took place.**

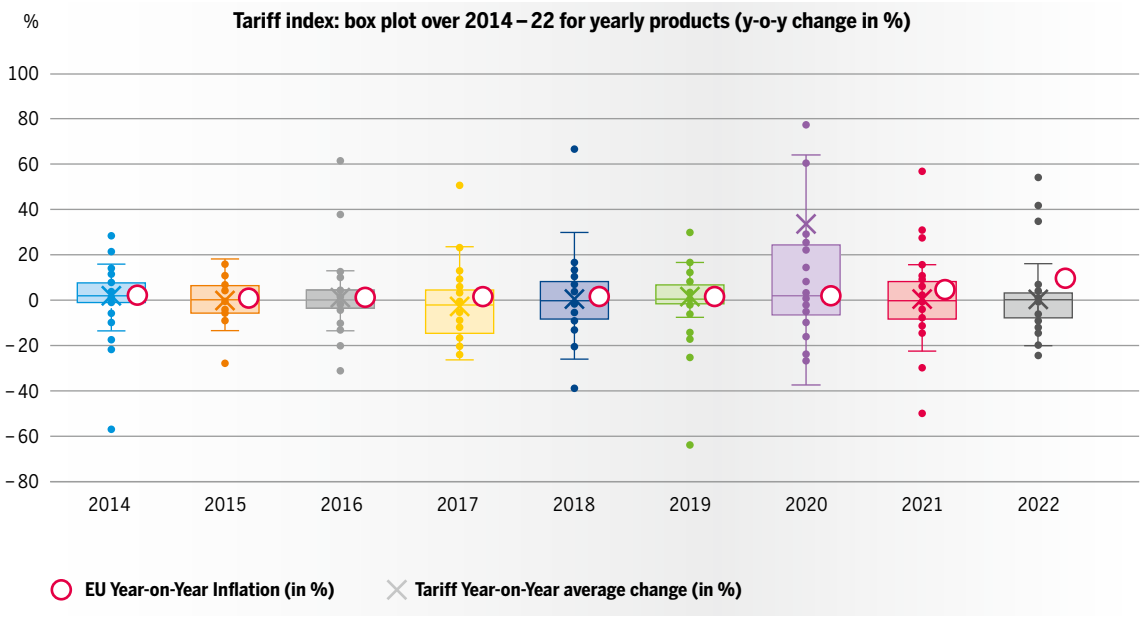


Figure 48: Results for TAR.2 on TSO tariff changes

It is clear that 2022 was an exceptional year for the EU gas market in many respects, including for gas TSOs, regarding prices and TSO tariffs. On wholesale markets, the TTF hub reached a record value of more than 300 EUR/MWh in August 2022. Such levels were unconceivable to most analysts just a few months before, as the gas price had hovered for years around 20 EUR/MWh.

The crisis did not spare some TSOs from instability on revenues (cf. section on TAR.1), and TSO tariffs in most MSs have not followed the pace of inflation in the EU[71].

At the worst of the 2022 EU gas crisis, a change in the TSO tariff patterns is clearly visible, with **most TSOs showing yearly tariff changes slipping significantly behind the EU inflation peak of 9.2 %**, since the median TSO experienced a 0.3 % tariff increase compared to 2021 (for the average TSO, this is a 0.8 % increase).

68 This data was provided via 40 responses.

69 A few TSOs could not provide data for every year, which is often explainable by changes in the scope of activities of the TSO, or a late opening of their gas market. TSOs benefiting from a derogation or from an exemption often opted out from sending such commercially sensitive data.

70 For a given year, this box plot gives information on the **year-on-year tariff percentage change** (for example, for year 2014 the graph indicates the distribution of percentage changes in average tariffs compared to 2013), about the **lowest value of the percentage change** in average tariffs among TSOs, the **lower quartile** of the distribution (the TSO whose value is above 25 % of all TSOs' values), the **arithmetic mean** of the distribution (depicted as an 'x'), the **median** (the TSO whose value is exactly at the centre of the distribution, depicted as a horizontal line in the box), the **upper quartile** of the distribution (the TSO whose value is above 75 % of all TSOs' values) and the **highest value of the percentage change** in average tariffs in the distribution. The **so-called 'box'** is the rectangle covering the middle half of the distribution, whose limits are the upper and lower quartiles. The **so-called 'Interquartile range' (IQR)** is delimited by these two quartiles, it is represented by the height of the box, and it contains 50 % of TSOs. The so-called **'whiskers'** are the vertical lines limited by short horizontal bars that connect to each box, and any TSO outside the whiskers is considered as a 'statistical outlier' because its values are significantly different from other TSOs' (beyond 1.5 times the IQR from each quartile, as a usual statistical convention).

71 The regulated revenue of TSOs largely depends on the evolution of CAPEX and OPEX, whose variations are not always indexed to inflation, and moreover, the inflation forecast might be erroneous when setting the value of the regulated revenue. Therefore, regulated revenues often respond to inflation with a delay.

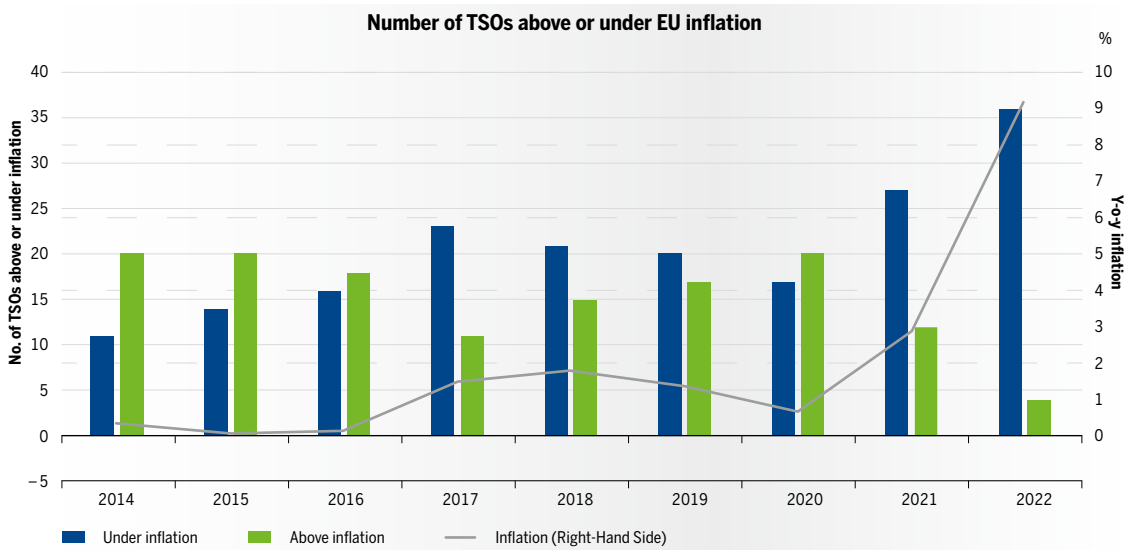


Figure 49: Yearly inflation and distribution of TSOs per average rate of tariff change

In fact, since 2020 and the start of the COVID-19 crisis, **tariffs have fallen far behind the pace of inflation in a growing number of TSOs**: 17 TSOs out of 37 TSOs behind inflation in 2020, then 27 TSOs out of 39 in 2021, and finally 36 TSOs out of 40 in 2022. In 2022, only four European TSOs mentioned average tariff increases above the Eurostat value of +9.2 %[72].

As for indicator TAR.1 on revenue recovery, for many TSOs, the evolution of TSO tariffs was probably impacted to some extent by the **external shocks of the COVID-19 recovery and the EU gas crisis** in the wake of the Russian invasion of Ukraine. However, **it is not possible here to identify which share of the evolution results from these macro-economic shocks and from other factors.**

Half of the European TSOs in the middle of the distribution in 2022 (i.e., in the Interquartile Range) logged a tariff average change between −7.2 % and +2.6 %, which is significantly under the +9.2 % inflation peak that same year[73].

Figure 50 depicts **2022 as a pivotal year** regarding TSO tariffs and inflation for the median TSO.

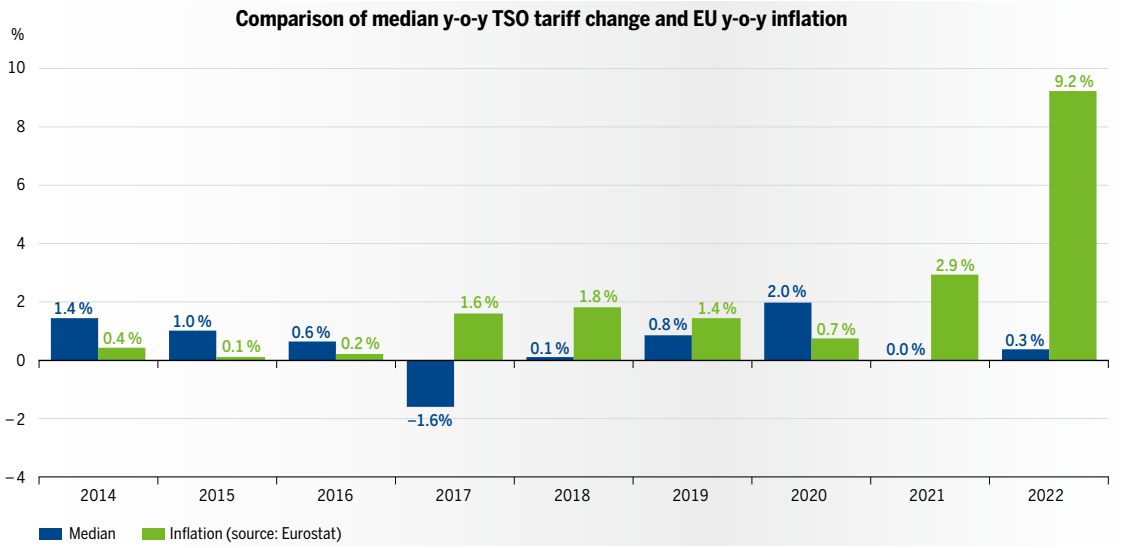


Figure 50: Median TSO tariffs significantly fell behind inflation since 2021 – showing the disconnect between TSO tariffs and the inflation rate

72 A more sophisticated analysis would check every year the specific inflation level in the MS of each TSO. Nevertheless, using the EU average inflation level as a general reference for all TSOs already gives a first indication that tariff changes for TSOs in Europe were, on average, in line with EU inflation levels until 2020, not afterwards.

73 The Interquartile Range (IQR) is a statistical indicator measuring the distance between the upper and the lower quartile of the statistical distribution, i.e., the difference in values taken by the TSO whose value is higher than the value of 75 % of all TSOs, and by the TSO whose value is higher than the value of 25 % of all TSOs. It is therefore a measurement of the proximity of values taken for the half of all TSOs which are closest to the 'median' TSO.

The median EU TSO experienced an average tariff increase in a range roughly comprised between −2 % and +2 % since 2014, which is broadly in line with the moderate EU inflation measured until the gas crisis by the Harmonised Index of Consumer Prices (HICP) of Eurostat[74].

Based on the previous charts, **the following takeaways are noted**:

- **Until 2018**, the average European TSO had a yearly tariff change in line with or below inflation levels, i.e., within a range of about ± 2 % a year, depending on the considered year.
- **Data for 2019 and 2020** showed wider ranges than before for yearly average tariff variations. For a few TSOs, tariffs were doubled or even rose sixfold because of market mergers, which were performed close to when the TAR NC implementation launched.
- **Data for 2021 and 2022** indicates a return to the pattern prevailing before 2019–20, regarding ranges for average yearly tariff changes, with an EU average of +0.8 % in 2022.

From the latter bullet point, which mentions a switchback to previous values for the average tariff change, it would however be misleading to conclude that the TSO tariffs have not been affected by the gas crisis.

Two possible causes for the discrepancy between inflation and TSO tariffs are suggested here:

- **One central reason proposed by some TSOs is that their respective NRAs have adjusted tariffs** downwards due to over-recoveries received in the past that are given back to consumers. This could especially be the case for these TSOs which registered high auction premia in relation to high LNG unloads and/or congestion at IPs due to reshuffled flow patterns at the EU level.
- **Another reason could be the delay** between the moment when inflation appears and when tariffs are adjusted accordingly, once TSOs and NRAs can assess the situation on revenue recovery. This generally takes a few months to have consequences on TSOs' finances.

There are only some hints that point to the recent macroeconomic shocks. Based on feedback received from TSOs, we argue that this disconnect between tariffs and inflation is probably explained, at least to some extent, by the joint effects of the post-pandemic economic recovery and the supply shock from the war in Ukraine.

74 **Eurostat – Harmonised index of consumer prices (HICP)**

Picture courtesy of Gas Connect Austria

5.2.3 TAR.3: SEASONAL FACTORS

5.2.3.1 Description of TAR.3

TAR.3 is an indicator based on the values of **seasonal factors at IPs for quarterly, monthly, daily, and within-day standard capacity products**, in case they are applied by a TSO. This indicator was introduced in the 2020 edition of the report[75]. As seen in the Implementation Monitoring section of this 2024 report on 2023 data, only nine TSOs apply seasonal factors.

Article 3(21) of the TAR NC defines a seasonal factor as *'the factor reflecting the variation of demand within the year which may be applied in combination with the relevant multiplier'*. This topic is mostly addressed in Chapter III *'Reserve prices'*, Chapter VII *'Consultation requirements'*, and Chapter VIII *'Publication requirements'* of the TAR NC, whose respective application dates were 31 May 2019, 6 April 2017, and 1 October 2017.

5.2.3.2 Goal of TAR.3

The aim of TAR.3 is to **provide transparency on seasonal factors** applied to short-term products.

The aim of seasonal factors is to foster efficient system use and to improve the cost-reflectivity of reserve prices, for example by allowing higher reserve prices in months with high utilisation rates, and lower reserve prices in low utilisation months. As seasonal factors are coefficients used to calculate the reserve price, it is possible to increase (respectively, decrease) the reserve price by increasing (respectively, decreasing) the value of the seasonal factor.

5.2.3.3 Assumptions for TAR.3

TAR.3 considers a range of values for **seasonal factors used by each TSO**.

TAR.3 collects information as to whether the TSOs are using seasonal factors for quarterly, monthly, daily, and within-day standard capacity products.

In case seasonal factors are applied, this indicator focuses on the minimum, maximum and average values of seasonal factors at IPs for each product as allowed by Article 12.1 of the TAR NC. Values considered were valid on **1 October 2023**.

5.2.3.4 Results collected from EU TSOs for TAR.3 in 2023 for this 2024 report

In total, **only nine European TSOs indicated that they have used seasonal factors** for quarterly, monthly, daily and within-day standard capacity products. Five of these nine TSOs also indicated that, for each capacity product duration, the same range of multipliers always applied, while the four other TSOs said that different ranges of seasonal factors were used for a given product duration[76].

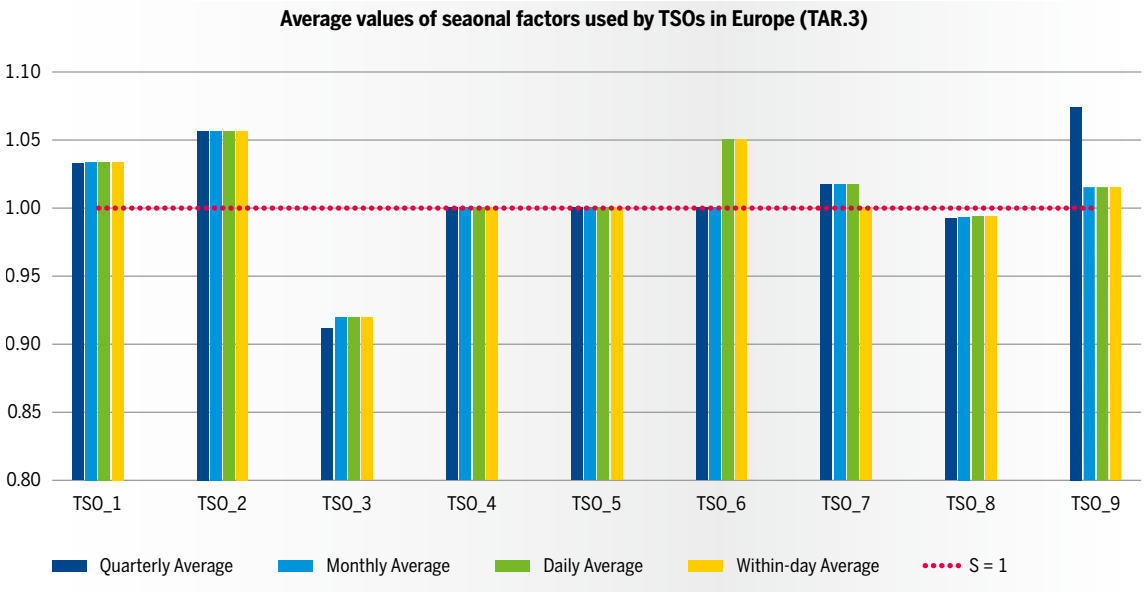
Figure 51 shows the average value of the seasonal factors used by the TSOs for each of the non-yearly capacity products as of 1 October 2023[77]. TSOs without seasonal factors are not on this figure.

75 This indicator shows the values of the seasonal factors applied by each TSO, for quarterly, monthly, daily, and within-day products as of 1 October 2023. In practice, in all editions of this report, only a small number of EU TSOs have used seasonal factors (nine TSOs in this 2024 report). No change has been made in this indicator in this 2024 report. The reduction in the number of TSOs applying seasonal factors in this 2024 report compared to the 2022 edition is explained by some TSOs no longer participating in this report.

76 One TSO out of the nine with seasonal factors clarified that seasonal factors are only applied at entry IPs of their network, not at exit IPs.

77 The line (S=1) represents a value of 1 for the average of seasonal factors for each capacity product duration. It represents the case where, over the year, the impact of seasonal factors does not modify the impact of multipliers. A value above 1 indicates that, on average, seasonal factors make short-term products relatively more expensive than what they are, once multipliers are applied. A value under 1 indicates that, on average, seasonal factors make short-term products relatively cheaper than what they are, once multipliers are applied.

Picture courtesy of TAP



	TSO_1	TSO_2	TSO_3	TSO_4	TSO_5	TSO_6	TSO_7	TSO_8	TSO_9
Quarterly Average	1.0325	1.0562	0.9115	1.0000	1.0000	1.0000	1.0175	0.9925	1.0733
Monthly Average	1.0333	1.0562	0.9193	1.0000	1.0000	0.9998	1.0170	0.9933	1.0150
Daily Average	1.0333	1.0562	0.9193	1.0000	1.0000	1.0513	1.0170	0.9933	1.0150
Within-day Average	1.0333	1.0562	0.9193	1.0000	1.0000	1.0513	1.0000	0.9933	1.0150
S=1	1	1	1	1	1	1	1	1	1

Figure 51: Average values of seasonal factors used by TSOs in Europe (TAR.3)

Most TSOs used seasonal factors with an average value close to '1' across the year for each of the capacity products. This indicates that the seasonal factors have an effect by modulating the reserve prices over the year, but **they do not significantly alter the average reserve price of short-term products over the year**. However, seasonal factors have a significant impact, since they make some products cheaper in some seasons and more expensive in others.

Figure 51 indicates that **seasonal factors are used only by nine European TSOs**, but these TSOs apply them in a **diverse way**, with various effects on reserve prices.

It is also possible to consider seasonal factors by focusing on the **TSO-specific range of seasonal factors for each product duration**. By observing the following four figures, where the minimum and maximum values of the seasonal factors for each product duration and for each TSO are compared, a complementary approach is visible.

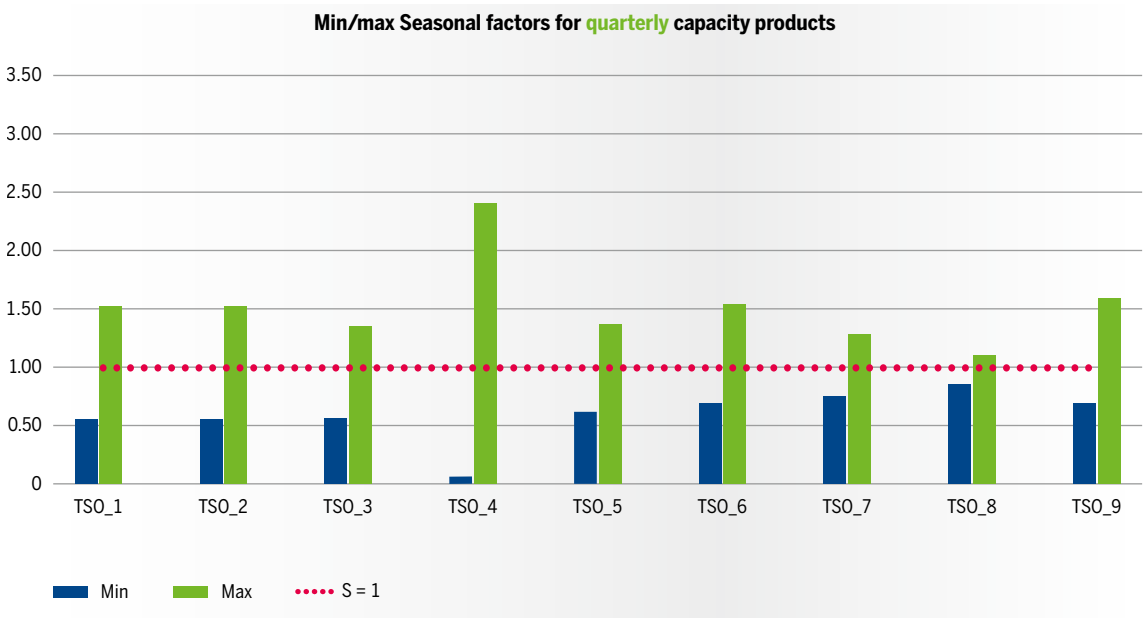


Figure 52: Minimum and maximum values of seasonal factors used by TSOs for quarterly products

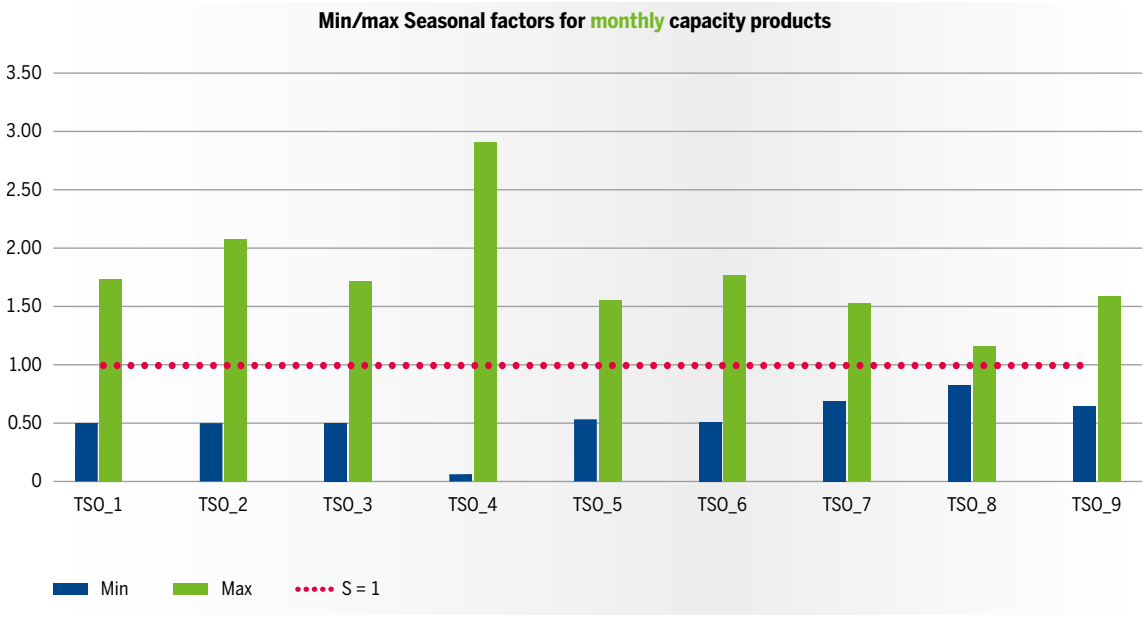


Figure 53: Minimum and maximum values of seasonal factors used by TSOs for monthly products

- **For one TSO (TSO_4), the range of values for seasonal factors is very wide:** for a given capacity product duration, the maximum seasonal factor at one time of the year is between 31 and 39 times as much as the minimum seasonal factor at another time of the year. For this TSO, seasonal factors considerably incentivise the booking of a specific product at specific seasons.
- **At the other end of the spectrum**, one TSO (TSO_8) uses a narrow range of seasonal factors, since, for a given capacity product duration, the maximum seasonal factor at one time of the year is only between 1.3 and 1.4 as much as the minimum seasonal factor at another time of the year. Here, seasonal factors give a smaller incentive to adjust bookings at specific times. However, this incentive is higher than for TSOs without seasonal factors.
- **The seven other TSOs apply intermediate values for seasonal factors.**

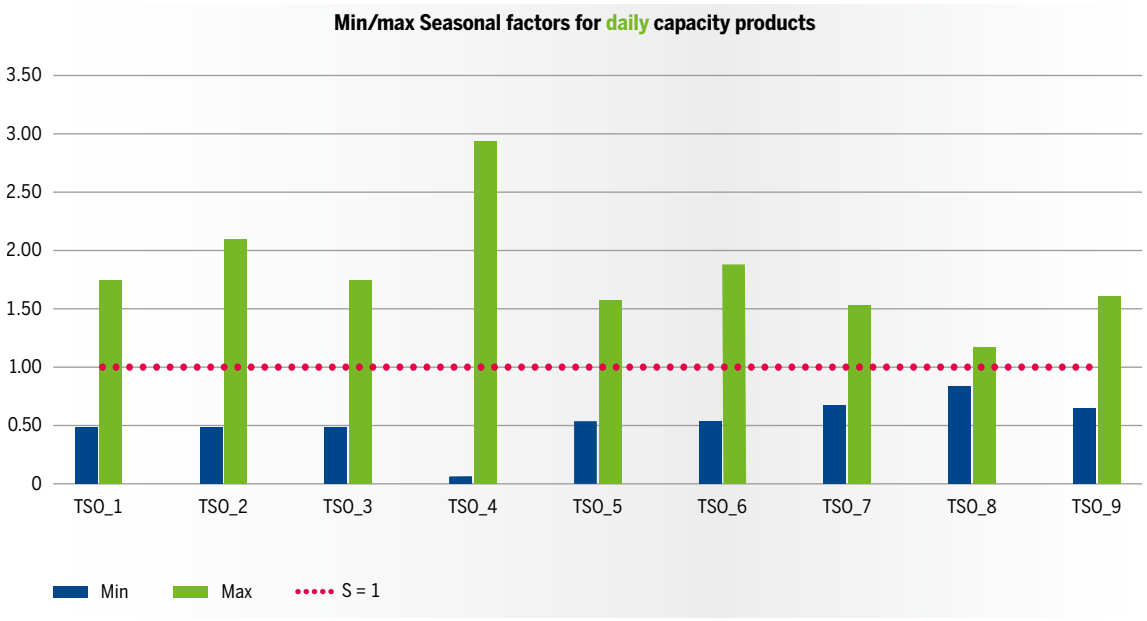


Figure 54: Minimum and maximum values of seasonal factors used by TSOs for daily products

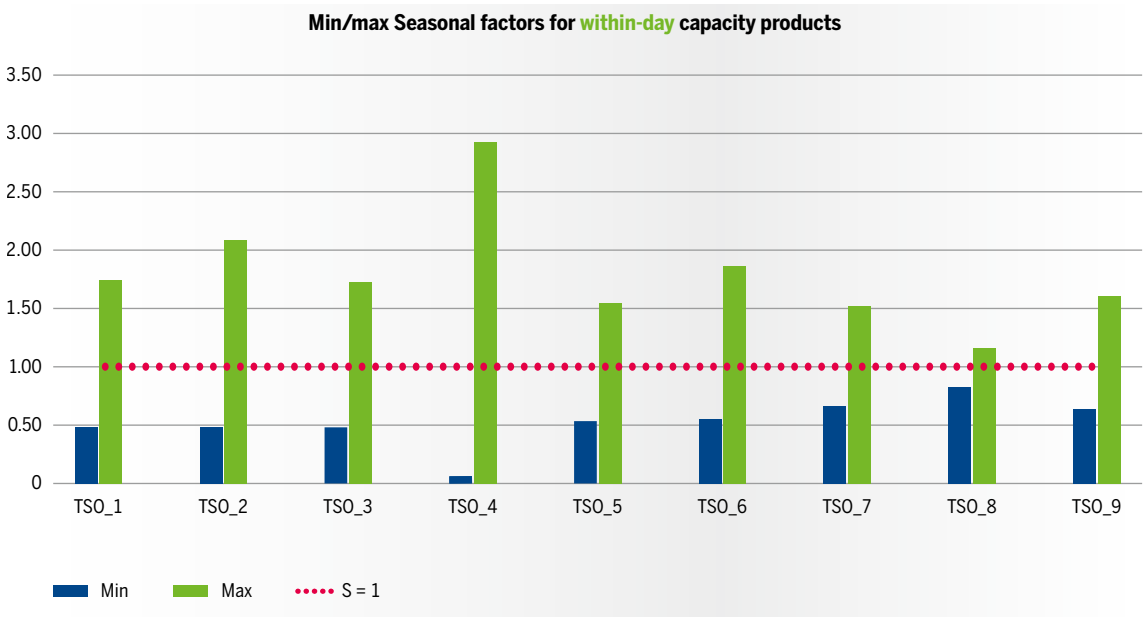


Figure 55: Minimum and maximum values of seasonal factors used by TSOs for within-day products

- **All nine TSOs with seasonal factors apply a minimum value under 1 and a maximum value above 1 for each product duration**, which somewhat spurs bookings in the low-consumption season and disincentivises them in the high-consumption season.
- **All TSOs with seasonal factors except one (TSO_7) apply exactly the same values for seasonal factors for daily and within-day products.** It means that for most TSOs, the pricing incentive for within-day is not modified by seasonal factors compared to daily products. For TSO_7, the difference in values between daily and within-day seasonal factors is however very limited.

In contrast to indicators TAR.1 (revenue recovery) and TAR.2 (changes in capacity-based tariffs), **no major evolution is observed in 2024 on indicator TAR.3 about seasonal factors**, compared to the previous 2022 edition of this report on 2021 data.

5.2.4 TAR.4: PUBLICATION OF INFORMATION IN ENGLISH

5.2.4.1 Description of TAR.4

TAR.4 indicates whether information is available in English for some specific TAR NC items which are described below and are covered in Chapter VII *'Consultation requirements'*, and Chapter VIII *'Publication requirements'* of the TAR NC[78]. This indicator is an updated version of the one in previous editions published in 2018, 2020, and 2022.

It comprises now four sub-indicators, each covering an information item, **to assess whether this item is published in English[79]**:

1. **Information for the periodic consultation: Article 26(1)** of the TAR NC establishes that the periodic consultation shall be performed by the NRA or TSO, as decided by the NRA, at least every five years. The indicator checks if information on this consultation is published in English.
2. **Information on the responses to the periodic consultation: Article 26(3)** of the TAR NC establishes that the responses received for the consultation and their summary shall be published by the TSO or NRA, depending on who published the consultation documents.
3. **Information for the yearly capacity auction:** information specified in **Article 29** of the TAR NC shall be published before the annual yearly capacity auction by the NRA or TSO, as decided by the NRA.
4. **Information to be published before the tariff period: Article 30** of the TAR NC establishes that some information shall be published before the tariff period in accordance with the requirements set out in Articles 31 and 32 by the NRA or TSO, as decided by the NRA.

TAR NC requirements involving the availability of information in English are described in Chapter VII *'Consultation requirements'*, and Chapter VIII *'Publication requirements'* of the TAR NC, whose application dates were respectively on 6 April 2017 and 1 October 2017.

- **Article 26(1) of the TAR NC** mentions that one or more consultations shall be conducted, and that the corresponding consultation documents should be published, to the extent possible, in English.
- Additionally, **Article 31 of the TAR NC** states that information relevant for Article 29 on annual yearly capacity auctions and for Article 30 on the upcoming tariff period should be available to the public in one or more official languages of the Member State and, to the extent possible, in English.

5.2.4.2 Goal of TAR.4

- Indicator TAR.4 aims to **check if information required to be published per the TAR NC is available in English**, which shall facilitate access to markets for all network users in a non-discriminatory way and improve effectiveness in the consultation process. It contributes to transparency and tariff comparability across Europe. Documents in English enhance market integration by facilitating such access to information.

This indicator only refers to information where TSOs are responsible for publication; it does not check whether information is actually published in English where NRAs are tasked with publishing.

78 TAR.4 was updated in the 2020 edition to indicate any evolution on publication in English compared to the previous report. In 2020, there was a category named 'NRA or Ministry' when either the NRA or the Ministry was responsible for publishing the relevant information. In the 2022 report, this category had been split into two: 'NRA' and 'Ministry.' However, since no Ministry is active in this field, this latter category was taken out of this 2024 report.

79 In contrast with the previous version of this report, published in 2022, this 2024 edition removes one sub-indicator, which focused on whether information for the consultation on some discounts, multipliers, and seasonal factors was available in English. This consultation, which should always be run by the NRA according to Article 28 of the TAR NC, should not be investigated by TAR.4, to remain consistent with the approach for other sub-indicators: this Monitoring Report should only control information where TSOs, not NRAs, are responsible for publishing.


Picture courtesy of Amber Grid

5.2.4.3 Assumptions for TAR.4

For each sub-indicator mentioned above, in this 2024 report, TSOs were requested to reply with one of the following answers[80]:

- **Yes**, if the information item is published in English.
- **No**, if the information item is not published in English.
- **NRA**, if the TSO is not responsible for data publication because the publication of information for a specific topic is the responsibility of the NRA.
- **Derogation** if the TSO holds a derogation.
- **Not relevant**, when the question was not relevant for a TSO. This may apply to those TSOs that do not have IPs and therefore did not hold auctions and publish related information, or to those TSOs which, instead of holding auctions, applied an implicit allocation mechanism (i.e. implicit auctions) at IPs, pursuant to Article 30 of the CAM NC.

In cases where the TSO reported that the NRA is responsible for the information publication in English, there has been no follow-up by ENTSOG regarding whether this information item was published in this language in practice. This is because it is not the TSOs' responsibility and TAR.4 is mainly focused on the responsibilities of the TSOs for Chapters VII and VIII of the TAR NC.

80 Compared to the previous report published in 2022, the category 'Undecided/Not relevant' now becomes 'Not relevant' in this 2024 report. The reason is that, at the time of this 2024 report, a periodic consultation has already been run and the shift to the TAR NC-based new tariff period is supposed to have taken place for all TSOs. In the 2022 report, this was not yet the case. In addition, the category 'Ministry' is not kept in this 2024 report, because the Ministry was never responsible for tariff publication in any MS as of 1 October 2023.

5.2.4.4 Results collected from EU TSOs for TAR.4 in 2023 for this 2024 report

The table below shows the answers provided **via 42 responses on TAR.4**. These 42 answers each cover at least one of the four sub-indicators following the abovementioned assumptions.[81]

Is information published in English for each information item? If TSO is not in charge of publication, response should be 'NRA'				
TSO number	**Information periodic consultation**	**Responses periodic consultation**	**Information yearly capacity auction**	**Information before tariff period**
TSO_01	NRA	NRA	NRA	NRA
TSO_02	NRA	NRA	Yes	Yes
TSO_03	Yes	Yes	Yes	Yes
TSO_04	NRA	NRA	Yes	Yes
TSO_05	NRA	NRA	Yes	Yes
TSO_06	NRA	NRA	Yes	Yes
TSO_07	NRA	NRA	NRA	NRA
TSO_08	Yes	Yes	Yes	Yes
TSO_09	Yes	Yes	Yes	Yes
TSO_10	NRA	NRA	NRA	NRA
TSO_11	NRA	NRA	Yes	NRA
TSO_12	NRA	NRA	Yes	Yes
TSO_13	Yes	Yes	Yes	Yes
TSO_14	NRA	NRA	Yes	Yes
TSO_15	NRA	NRA	NRA	NRA
TSO_16	Yes	Yes	Yes	Yes
TSO_17	Yes	Yes	Yes	Yes
TSO_18	NRA	NRA	Yes	Yes
TSO_19	NRA	NRA	Yes	Yes
TSO_20	Yes	Yes	Not relevant	Yes
TSO_21	NRA	NRA	Yes	Yes
TSO_22	Yes	Yes	Yes	Yes
TSO_23	NRA	NRA	Yes	Yes
TSO_24	NRA	NRA	Not relevant	NRA
TSO_25	NRA	NRA	Yes	Yes
TSO_26	NRA	NRA	Yes	Yes
TSO_27	Yes	Yes	Yes	Yes
TSO_28	NRA	NRA	NRA	NRA
TSO_29	NRA	NRA	Yes	Yes
TSO_30	NRA	NRA	NRA	NRA
TSO_31	Yes	Yes	Yes	Yes
TSO_32	NRA	NRA	Yes	Yes
TSO_33	NRA	NRA	NRA	NRA
TSO_34	NRA	NRA	Yes	Yes
TSO_35	NRA	NRA	Yes	Yes
TSO_36	NRA	NRA	Yes	Yes
TSO_37	NRA	NRA	Yes	Yes
TSO_38	NRA	NRA	NRA	NRA
TSO_39	NRA	NRA	NRA	NRA
TSO_40	NRA	NRA	Not relevant	Yes
TSO_41	Yes	Yes	Not relevant	Yes
TSO_42	Yes	Yes	Yes	Yes

Table 3: Status of publication in English of each sub-indicator of TAR.4 for each TSO

81 For each TSO, the identification number used for indicator TAR.4 remains the same for each information item of TAR.4. For example, TSO_1 refers to the same TSO across all information items of TAR.4.

Based on the results shown in Table 3, **for each sub-indicator the following observations** can be extracted (cf. Figure 56[82]).

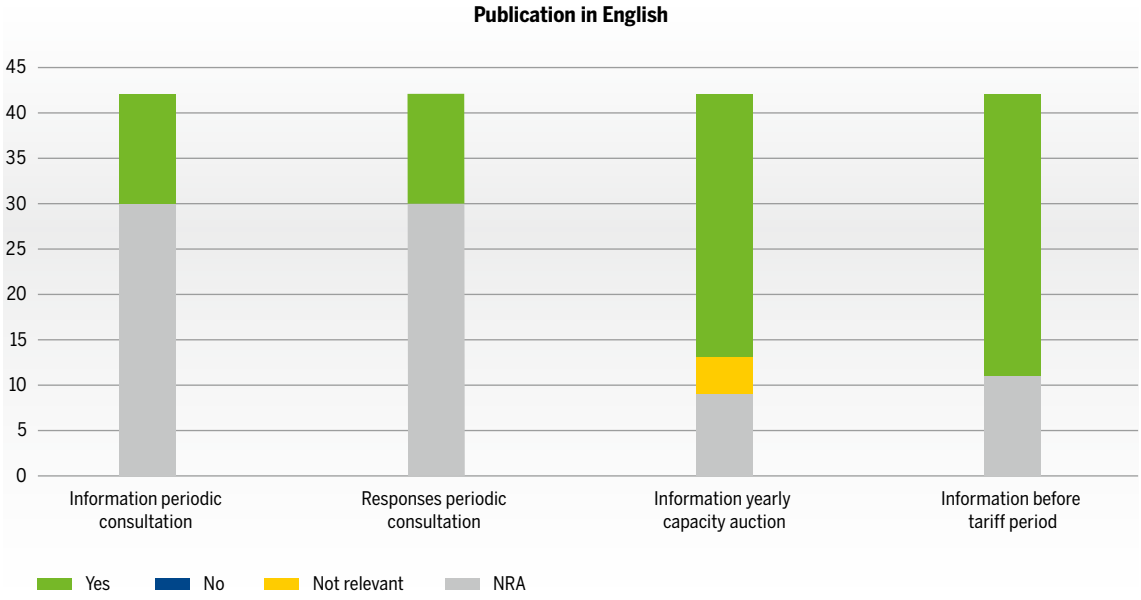


Figure 56: TAR.4 results for TSOs in Europe

1. **Information published on the periodic consultation:** out of the 42 answers, the NRA is responsible for data publication in most cases (30 answers). The remaining 12 answers indicated that TSOs published the information in English.
2. **Published responses to the periodic consultation:** this sub-indicator reflects responses received for the previous information item. Most TSOs said that the publication of consultation responses is made by the NRA (30 answers). 12 answers reported that they published consultation responses in English.
3. **Information published about the annual yearly capacity auction:** 29 answers reported that TSOs published the information in English. Nine answers said that it is the responsibility of the NRA. Four answers mentioned 'not relevant' because TSOs either apply the implicit allocation mechanism instead of auctions or have no IP.
4. **Information published before the tariff period:** most TSOs (a total of 31 answers out of 42 answers) indicated they publish tariff period information in English. In the case of eleven answers, it was reported that the responsibility of the information publication lies with the NRA. In contrast with the previous report published in 2022, **no answer was received stating that TSOs issued information in English only on some of these information items**; when responsible for this task, all European TSOs fully published information in English in 2023 for this 2024 edition of the Monitoring Report.

82 The figure represents data from the 42 responses received.

Figure 57 gives an overview of all TAR.4 items and shows the split of occurrences where information is published in English, over all four sub-indicators above.

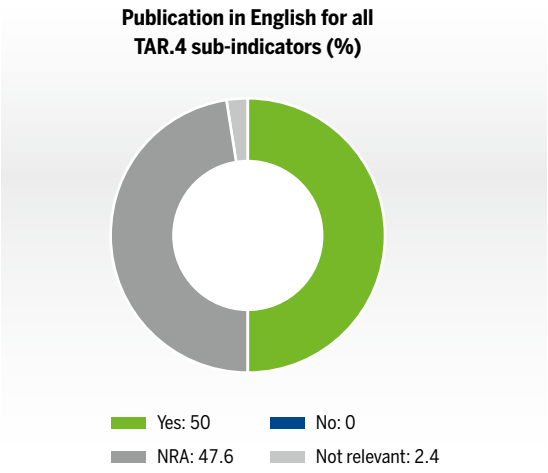


Figure 57: When in charge of publication, all TSOs publish data in English

From this chart, it is therefore possible to **draw the following conclusions on TAR.4:**

- If data for the four information items on publications is analysed as a whole[83], **for exactly 50 % of the items** (i.e., 100 % of items for which they were responsible for publication), **the TSOs reported that they published them in English**. For about 48 % of the items, publication was an NRA responsibility. And in about 2 % of the cases, the sub-item was not relevant for TSOs. No TSO indicated that they do not publish an English version.
- While this result confirms the pattern observed in the 2022-published report, we can again conclude that **accessibility of information in English continues to be excellent and has even slightly improved in recent years**. When tasked with information publication, TSOs confirmed they indeed always issued an English version of information in 2023 for this 2024 report. It helps with the involvement of all market participants.

83 Four data items times 42 TSOs responding means 168 data items with responses.

Picture courtesy of ONTRAS

5.2.5 TAR.5: MULTIPLIERS APPLIED BY TSOs

5.2.5.1 Description of TAR.5

This indicator covers the **multipliers applied on 1 October 2023 at IPs** by TSOs for each non-yearly standard capacity product[84].

- It provides information on quarterly, monthly, daily, and within-day standard capacity products, and it allows to know if the multipliers are **within the range** stipulated by the TAR NC.
- TAR.5 also checks **whether the same multiplier is used at all IPs** for a given product duration, or if multipliers are different depending on the IP.

The TAR NC defines a multiplier as *'the factor applied to the respective proportion of the reference price in order to calculate the reserve price for a non-yearly standard capacity product'* (Article 3(16) of the TAR NC)[85].

Article 13(1) of the TAR NC sets out the level of multipliers for the capacity products.

- Multipliers must be **between 1 and 1.5** (both included) for quarterly and monthly standard capacity products;
- Multipliers must be **between 1 and 3** (both included) for daily and within-day standard capacity products, unless *'duly justified cases'* apply[86].

5.2.5.2 Goal of TAR.5

The objective of TAR.5 is to give transparency on multipliers applied to short-term products **at IPs only.**

5.2.5.3 Assumptions for TAR.5

TAR.5 considers the range of values for **multipliers in use by each TSO on 1 October 2023**, and it verifies if some TSOs apply multipliers with values outside the ranges indicated in the TAR NC.

This indicator focuses on the minimum, maximum and average values of multipliers to cover the cases where – for a given duration of a capacity product – specific IPs benefit from specific multipliers, as allowed by Article 12.1 of the TAR NC.

- Some TSOs may apply different multipliers depending on the IP: for example, a quarterly multiplier of 1.3 at IP 1, and 1.4 at IP 2.
- In contrast, for other TSOs, multipliers will be the same for a given duration of a capacity product at all IPs: for example, 1.5 for all quarterly products at all IPs.

For each category of capacity products, the **arithmetic mean over all IPs** has been calculated by the TSO before sending their data to ENTSOG. Since the 2020 edition of the report, TSOs are requested to notify whether the same multiplier applies at all IPs in each category. In addition, for each TSO the identification number used remains the same for each sub-indicator of TAR.5. For example, TSO_01 refers to the same TSO for all short-term product durations.

The application date of Chapter II 'Reference price methodology' of TAR NC was 31 May 2019.

- In contrast with the report published in 2022, where two TSOs had not yet shifted to a new tariff period, in this 2024 edition all TSOs have shifted to a new tariff period according to their answers, which means TAR NC-mandated ranges for multipliers should now apply in each MS[87].
- However, multipliers may also be outside the daily and within-day ranges 'in duly justified cases'. Hence, values outside these ranges should not be interpreted as non-compliant values, if the NRA provided a justification.

84 No change was made in the definition of TAR.5 compared to the 2020 and 2022 editions.

85 The topic of multipliers is mostly addressed in Chapter III *'Reserve prices'*, Chapter VII *'Consultation requirements'*, and Chapter VIII *'Publication requirements'* of the TAR NC, whose application dates were 31 May 2019 for Chapter III, 6 April 2017 for Chapter VII, and 1 October 2017 for Chapter VIII.

86 Article 13(1)(b) of the TAR NC sets out that: *'In duly justified cases, the level of the respective multipliers may be less than 1, but higher than 0, or higher than 3.'*

87 For more information on the implementation status of the reference price methodology, please see Insight 8 in the Implementation Monitoring section.

5.2.5.4 Results collected from EU TSOs for TAR.5 in 2023 for this 2024 report

From **42** responses from TSOs on indicator TAR.5, this report only incorporates the replies from **37 TSOs**[88].

The following four figures below show the minimum and maximum values of multipliers applied by each TSO and for each capacity product duration on **1 October 2023**, as well as the minimum and maximum values set out in the TAR NC for each capacity product duration. These figures also display the European arithmetic average of the average value of multipliers for each TSO and for each capacity product duration[89].

- **Multipliers for quarterly and monthly products:** Article 13(1)(a) of the TAR NC mentions that 'for quarterly standard capacity products and for monthly standard capacity products, the level of the respective multiplier shall be no less than 1 and no more than 1.5'.

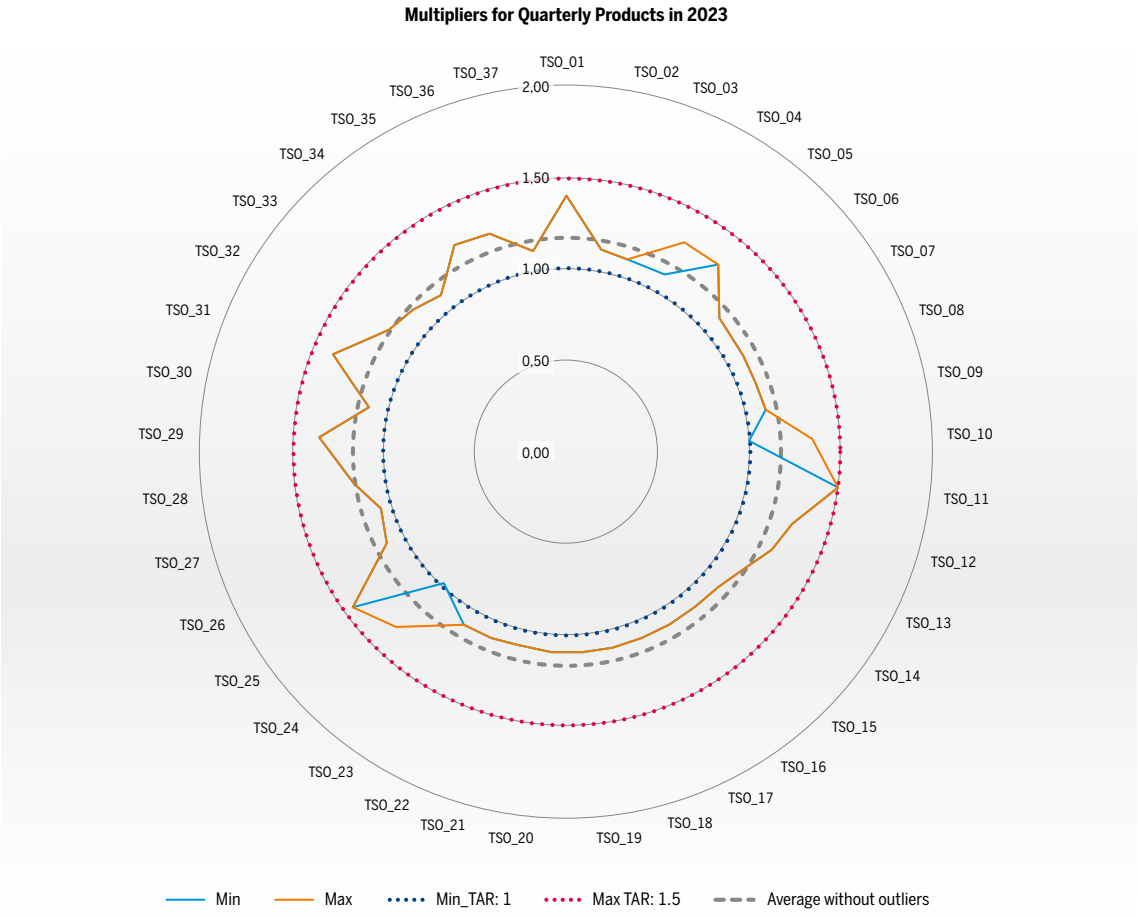


Figure 58: TAR.5 sub-indicator on quarterly multipliers for TSOs in Europe

In 2023 data collected for this 2024 report, all European TSOs fully comply with TAR NC ranges for quarterly multipliers, which is a difference to the 2022 edition when some TSOs had not yet shifted to new TAR NC rules. The average for quarterly multipliers is **1.18**, hence a slight increase compared to the 2022 report where the average was 1.15[90].

88 Here is a breakdown of the five responses received on TAR.5 which are not counted in the results. Three TSOs are not counted since they have no IP. And two other TSOs are not counted because they have a derogation on multipliers since they are merchant TSOs, which implies they don't have to follow TAR NC ranges and frequently adjust their multipliers during the gas year. No data was therefore included from these five TSOs.

89 Only TSOs with values within the TAR NC ranges are considered in the calculation of the European arithmetic average; the others, called 'outliers' here in a statistical context, are not counted in this calculation. To calculate the European arithmetic average, it is first necessary to calculate the average value of multipliers for each TSO, in case TSOs use different multipliers at different IPs for products of the same duration. Once the average is available for each TSO regarding each product duration, it is possible to calculate a European average across all TSOs (it is the European arithmetic average); this is done through the simple average of the individual value for each TSO.

90 This is mainly explainable by TSO_11 (named TSO_12 in 2022) which has moved to TAR NC rules in 2023 and complies with the upper limit now. TSO_11 is therefore counted in the EU average in 2024, while it wasn't in 2022, and it slightly increases this measure compared to 2022.

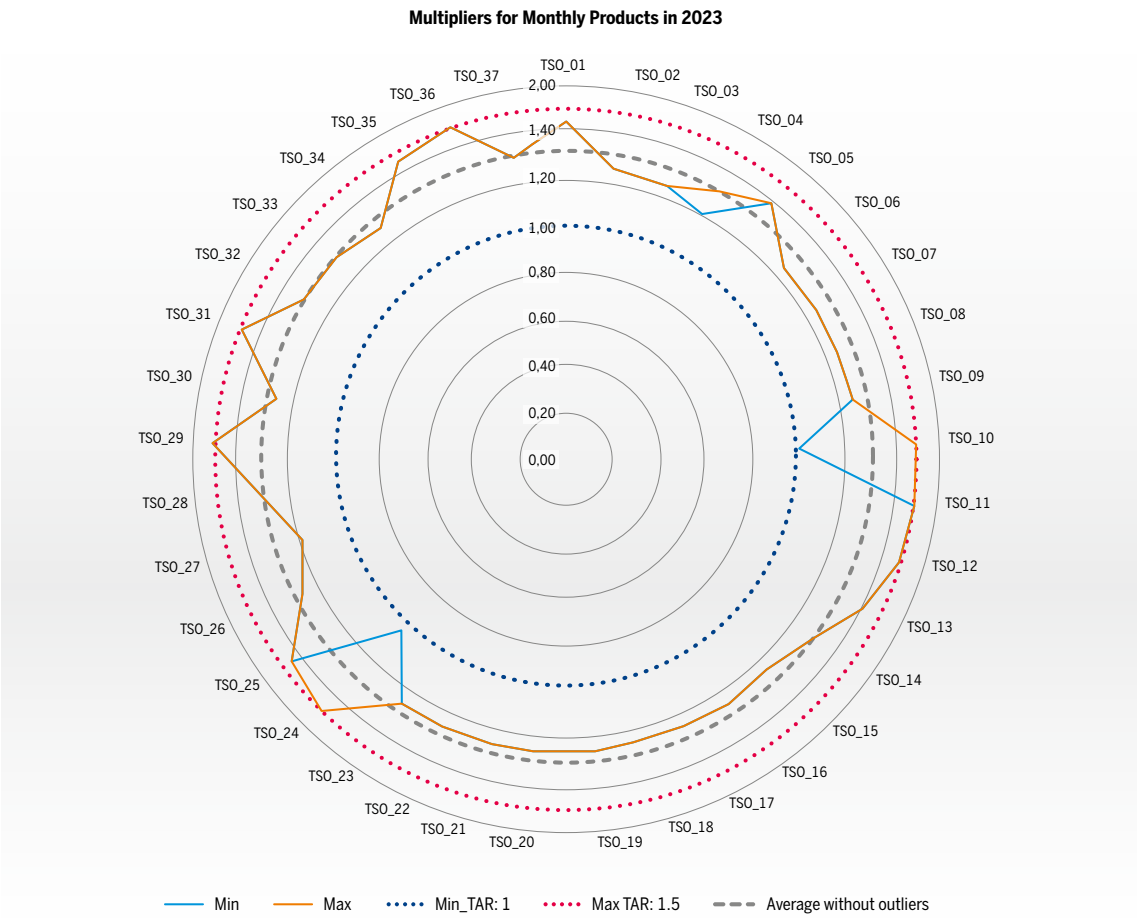


Figure 59: TAR.5 sub-indicator on monthly multipliers for TSOs in Europe

In 2023 data collected for this 2024 report, all European TSOs now fully comply with TAR NC ranges for monthly multipliers, which is also a difference with the 2022 edition when some TSOs had not yet shifted to new TAR NC rules. The average for monthly multipliers is **1.31**, hence the same value as in the 2022 edition.

- **Multipliers for daily and within-day products:** Article 13(1)(b) of the TAR NC states that *'for daily standard capacity products and for within-day standard capacity products, the level of the respective multiplier shall be no less than 1 and no more than 3. In duly justified cases, the level of the respective multipliers may be less than 1, but higher than 0, or higher than 3.'*

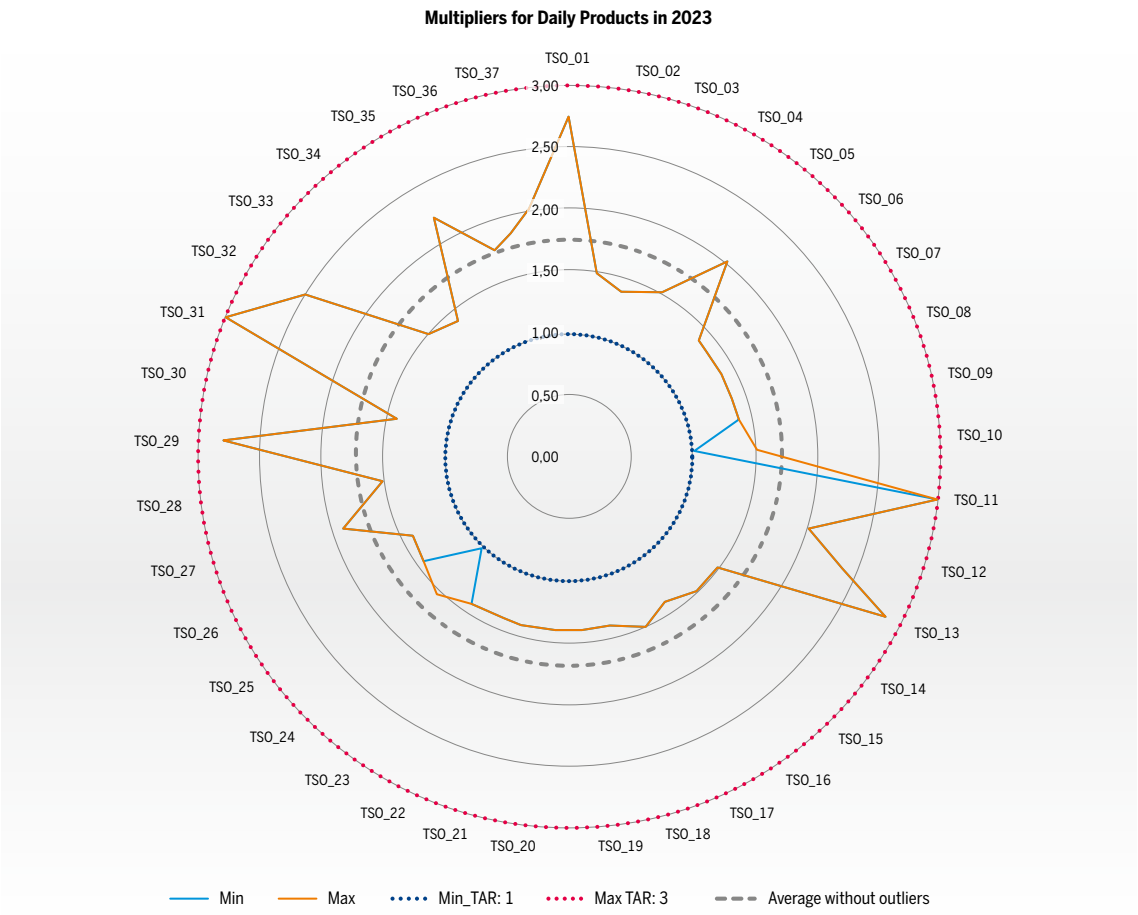


Figure 60: TAR.5 sub-indicator on daily multipliers for TSOs in Europe

For daily products, all European TSOs applied multipliers within the TAR NC default ranges, according to the 2023 data for this 2024 edition. In contrast, one TSO was under the lower limit in the previous edition published in 2022[91]. However, it should be recalled that the TAR NC allows for being outside the ranges *'in duly justified cases.'*

The average daily multiplier is **1.73** in this 2024 report on 2023 data, hence a slight decrease compared to the 2022 report, where it was 1.77.

91 This TSO did not participate in this 2024 edition.

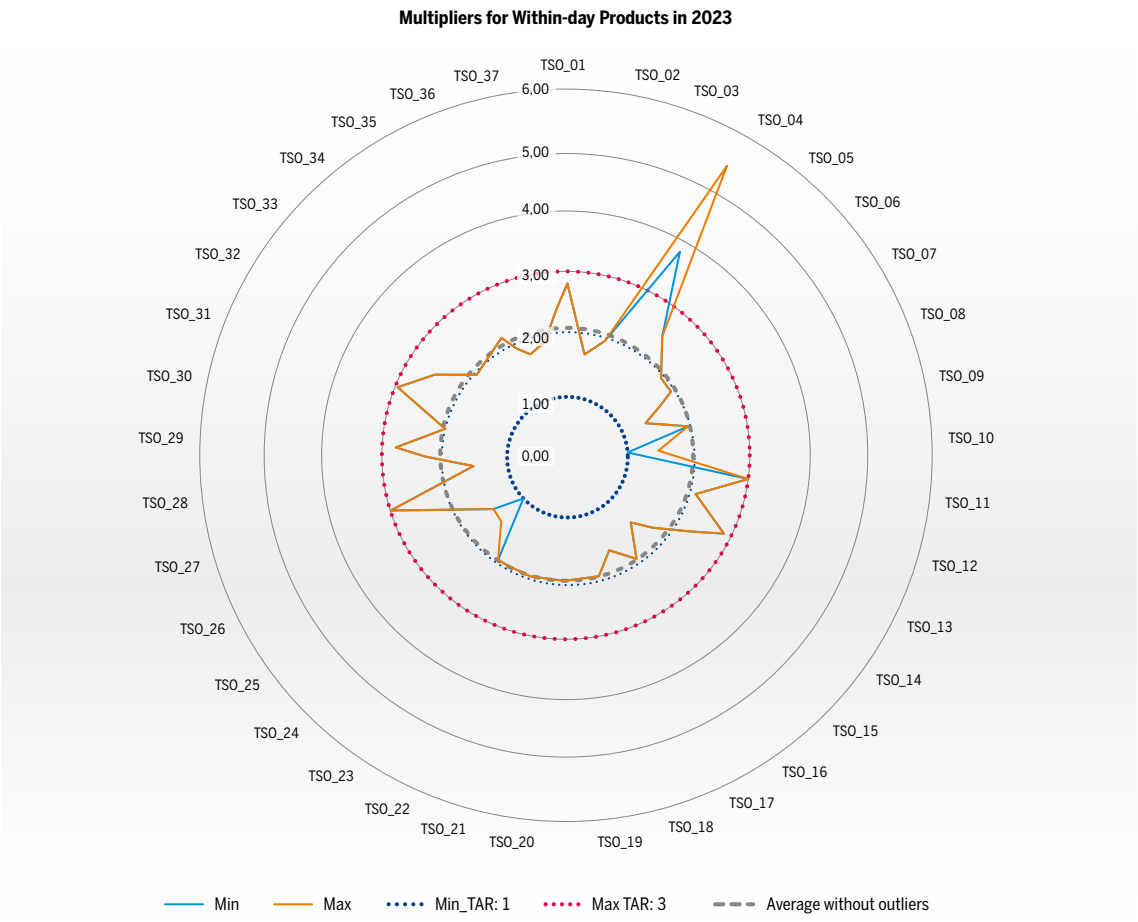


Figure 61: TAR.5 sub-indicator on within-day multipliers for TSOs in Europe

For within-day products, just one TSO is outside TAR NC default limits in 2023 data for this 2024 edition, compared to two TSOs in the 2022 edition[92]. In 2024, TSO_04 applies within-day multipliers above 3, with different values depending on the IP considered. However, as for daily products, *'in duly justified cases'* it is possible for TSOs to use multipliers above 3 or under 1[93].

In this 2024 edition, the average within-day multiplier among non-outlier TSOs is **2.06**, hence a slight reduction in the average within-day multiplier across Europe, compared to the 2022 edition, where it was 2.09.

92 A TSO which was outside the range for daily multipliers in the 2022 edition of the report did not participate in this 2024 edition of the Monitoring Report.

93 Indeed, the relevant NRA provided justification for within-day multipliers outside the TAR NC range for TSO_04.

5.3 CONCLUSIONS – EFFECT MONITORING

Regarding the five EM indicators used in this 2024 EM report on 2023 data, **the following conclusions can be drawn**:

TAR.1 RATIO OF UNDER-/OVER-RECOVERIES TO ALLOWED/TARGET REVENUES FOR TSOs

Results for TAR.1 show that, in 2021 and 2022, **most EU TSOs continued to reach a level of revenue recoveries which is close to the allowed/target revenue**. By nature, in most non-price cap regimes, any over-recovery is given back to TSO customers and any under-recovery is recouped through tariff increases in future years. There is only one regulated TSO with a full price cap regime in Europe, for which no reconciliation will take place.

It is admittedly not possible to ascertain to which extent macroeconomic shocks affected TSOs in 2021 and 2022, **however it is likely that the post-COVID-19 economic recovery and the EU gas crisis following the drop in Russian flows generated increased instability in the revenues of some TSOs at least**. This result is an interesting added value of this EM report.

TAR.2 CHANGES IN CAPACITY TARIFFS AT ALL TSOs' POINTS FOR YEARLY PRODUCTS

The evolution in tariffs for the median EU TSO **over the 2013–20 period indicated relative stability of tariffs, once inflation was taken into account**. For several TSOs, yearly tariff changes followed a trend which seems correlated to inflation levels, or even under these levels. A number of TSO tariffs followed patterns which deviated from inflation. A few TSOs displayed more accentuated spikes and troughs in their tariff evolution.

The 2022 report had identified that the application of TAR NC rules for TSOs taking part in market mergers sometimes prompted one-off large tariff increases, to align with other TSOs in the same merged entry-exit system. **However, on average, most of the significant increases were offset by the decreases.**

Since 2020, TSO tariff variations were gradually and **increasingly disconnected from inflation**. This mismatch is remarkable in 2022, with an average tariff increase of +0.8 % against an inflation value of +9.2 %.

The tariff pattern in 2021–22 is quite different from the one observed over 2013–20. In contrast to the 2019–20 period, where some TSOs experienced tariff instability mostly because of the application of TAR NC rules, in the 2021 – 22 period a frequent stability in TSO tariffs prevails, with only 4 European TSOs mentioning tariff increases above the soaring inflation level. For the first time, it results in significantly lower tariffs in real terms for most TSOs.

Picture courtesy of GASCADE

TAR.3 SEASONAL FACTORS FOR IPs

Although seasonal factors may be useful to dovetail the variation of demand within the year, it has been observed that only nine European TSOs applied these factors to their non-yearly capacity products in 2023. Five of these TSOs kept seasonal factors the same for all their IPs. Our analysis shows no significant change compared to the 2020 and 2022 reports, other than those resulting from a change in TSOs participating in the report.

TAR.4 PUBLICATION OF INFORMATION IN ENGLISH

Consistently with results underscored in the 2020 and 2022 reports, feedback received from TSOs shows that NRAs often keep responsibility for publications on the periodic consultation, while TSOs are often in charge of publications for the tariff periods.

The availability of information in English was already excellent in the previous report. On 2023 data for this 2024 report, this is even improved. When TSOs are in charge of publications, in all cases tariff information is reported as available in English. This availability of tariff documents in English continues to be instrumental for the access of foreign network users to national markets, by facilitating tariff comparability and transparency.

TAR.5 MULTIPLIERS FOR PRODUCTS WITH QUARTERLY, MONTHLY, DAILY AND WITHIN-DAY DURATIONS AT IPs

The full application of the TAR NC was visible on multipliers on 2023 data for this 2024 report. While in the 2022 edition, most TSOs were already in line with the ranges of multipliers defined in the TAR NC, all TSOs now – other than those with derogations – comply with the mandatory ranges for quarterly and monthly products, due to the final shift to TAR NC rules for a few TSOs with long tariff periods.

Regarding daily and within-day capacity products, for which multipliers outside the default range are allowed subject to NRA's decision, only one TSO mentioned they are outside the default range and benefited from such a decision.

5.4 MAIN EFFECT MONITORING UPDATES COMPARED TO THE PREVIOUS REPORT

To mirror the comparison made for the Implementation Monitoring section in this report, here is an equivalent summary of trends and similarities or differences between this Effect Monitoring Report and the previous report published in 2022, considering that the definitions of the EM indicators were largely unchanged between the reports.

TAR.1 RATIO OF UNDER-/OVER-RECOVERY TO ALLOWED/TARGET REVENUE OF TSOs

Following a few data corrections made by TSOs in 2024 on past years' data, it appears that, until the 2021–22 gas crisis, the average European TSO used to get every year a ratio of under- or over-recovery comprised within a range from −2.6 % to +2.9 %. This report indicates a sharp evolution, with high average over-recoveries of +6.8 % in 2021 and then an under-recovery of −0.6 % in 2022. This reflects increased instability in revenue recovery but only for a minority of TSOs, which experienced both high over-recoveries and high under-recoveries in 2021 and 2022. Possible reasons for 2021 might include the economic recovery and the changing flow patterns in Europe creating higher revenues at LNG points and congestion premia at IPs. Possible reasons for 2022 might include a lower revenue due to the drop in Russian flows. However, national and local factors are also essential, and it is not possible to disentangle their responsibility in these evolutions. A major point to highlight is that TSOs are not structurally earning more or less than their regulated revenue since there is typically a reconciliation in the next few years. The big picture is that most TSOs' collected revenues still remain very close to their regulated revenue, as in previous years.

TAR.2 CHANGES IN CAPACITY-BASED TARIFFS

In 2024, the tariff evolutions indicate that since 2021 and – above all in 2022 – TSO average tariffs are increasingly decorrelated from inflation levels. This is a new development – until the last report, most TSOs were keeping tariffs close to the inflation levels. It might be the case that there will be some catch-up in future years, especially considering TAR.1 results showing average under-recoveries in Europe. It should be noted that for most TSOs, the recent evolutions do not come from TAR NC implementation rules or new institutional frameworks, such as market mergers in Germany or the Baltics, which took place earlier around 2020 and 2021. Some TSO tariffs followed patterns which deviated from inflation. The decorrelation between TSO tariffs and inflation might be caused by several reasons such as, for a few TSOs, over-recoveries in 2021 which may have justified not to adjust tariffs up or even to decrease them.

Picture courtesy of Terranets

TAR.3 SEASONAL FACTORS

Seasonal factors are used by a minority of European TSOs, nine of them in 2023 for this report. TSOs always apply minimum seasonal factors with a value under 1 and maximum seasonal factors with a value over 1, which is a condition for the combination between multipliers and seasonal factors to follow TAR NC rules. Seasonal factors still look quite homogeneous across Europe. However, when comparing the practices of European TSOs on seasonal factors, the ratio of the maximum to minimum seasonal factor is comprised between about 1.5 and 39.1, which reflects the different role given to seasonal factors as an incentive to book – or avoid – some capacity products at specific times in the year. But overall, seasonal factors are a tool which about three-quarters of European TSOs do not use.

TAR.4 PUBLICATION IN ENGLISH

The main message is still unchanged since the last report, regarding availability of an English translation of tariff-relevant information. In two-thirds of cases, NRAs are responsible for publications for the periodic consultations or the responses they received, and this report only aims at assessing TSOs' activities. In cases where TSOs are tasked with publications, the picture looks even better than in 2022: in 2024, all TSOs indicated they publish tariff information in English. This is a great illustration of the level playing field offered by TSOs to market participants, since tariff information is accessible in English everywhere.

TAR.5 MULTIPLIERS

Results from this 2024 report are consistent with those highlighted in 2022. The transition of most TSOs to new RPM rules between 2020 and 2022 came along with good compliance for TAR NC-prescribed ranges for multipliers. Now, all TSOs are supposed to have implemented TAR NC rules, since prevailing tariffs as of 31 May 2019 have become obsolete in every MS. In the case of one TSO only, the multiplier is outside the range prescribed in the TAR NC for within-day products, and this TSO duly received validation from their NRA, according to a flexibility which is set out in the TAR NC. This denotes another good achievement of the TAR NC, since all TSOs and NRAs duly followed the process and rules on multipliers, striking a balance between the advantage of long-term bookings to secure TSO revenues and the need for short-term bookings to keep the market liquid and open for arbitrage.

6 ANNEXES

ANNEX A LIST OF PARTICIPATING EUROPEAN TSOs

Please see a list of participating European TSOs in this report below.[94]

	European TSOs covered in the implementation monitoring part of the report	European TSOs covered in the effect monitoring part of the report
Austria	Gas Connect Austria GmbH Trans Austria Gasleitung GmbH	Gas Connect Austria GmbH Trans Austria Gasleitung GmbH
Belgium[95]	Fluxys Belgium S.A. Interconnector Limited	Fluxys Belgium S.A. Interconnector Limited
Bulgaria[96]	Bulgartransgaz EAD ICGB AD (exemption)	Bulgartransgaz EAD ICGB AD (exemption)
Croatia	Plinacro d.o.o.	Plinacro d.o.o.
Czechia	NET4GAS, s.r.o.	NET4GAS, s.r.o.
Denmark	Energinet	Energinet
Estonia[97]	Elering AS	Elering AS
Finland[98]	Gasgrid Finland Oy	Gasgrid Finland Oy
France	GRTgaz Teréga	GRTgaz Teréga
Germany	bayernets GmbH Fluxys Deutschland GmbH Fluxys TENP GmbH GASCADE Gastransport GmbH Gastransport Nord GmbH Gasunie Deutschland Transport Services GmbH GRTgaz Deutschland GmbH Lubmin-Brandov Gastransport GmbH NEL Gastransport GmbH Nowega GmbH ONTRAS Gastransport GmbH Open Grid Europe GmbH terranets bw GmbH Thyssengas GmbH	bayernets GmbH Fluxys Deutschland GmbH Fluxys TENP GmbH GASCADE Gastransport GmbH Gastransport Nord GmbH Gasunie Deutschland Transport Services GmbH GRTgaz Deutschland GmbH Lubmin-Brandov Gastransport GmbH NEL Gastransport GmbH Nowega GmbH ONTRAS Gastransport GmbH Open Grid Europe GmbH terranets bw GmbH Thyssengas GmbH

94 The three TSOs from the United Kingdom – **GNI (UK) Ltd., National Grid Gas plc** (**renamed** National Gas Transmission plc in 2023) and **Premier Transmission Ltd.** – participated in the previous editions of this report and contributed with data for the IM and EM parts in the 2022 report, since the reference date was 1 October 2021. On that date, and until 31 December 2021, TSOs from the United Kingdom were ENTSOG Members, i.e., until the completion of the Brexit process. For this 2024 report on 2023 data, UK TSOs were therefore not requested to participate.

95 Since the 2022 edition of this report, Interconnector Limited (formerly Interconnector UK Ltd.) is a TSO registered as a Member from Belgium. It was a United Kingdom TSO in editions published until 2020.

96 ICGB AD is the company operating the Interconnector Greece-Bulgaria (IGB), which was inaugurated on 1 October 2022 (**EC 2022**). ICGB benefits from an exemption (**EC 2018**). This exemption covers requirements regarding third-party access, tariff regulation, and ownership unbundling. Therefore, data from TSO ICGB AD was not requested for this report.

97 Elering AS, the Estonian TSO, benefitted from a general derogation until the 2020 edition of this report. Since the 2022 edition, this is no longer the case and Elering AS therefore sent data for this report.

98 Gasgrid Finland Oy is the Finnish TSO since 1 January 2020. It was unbundled from Gasum Oy due to the opening for competition of the gas market in Finland at that date. Until the 2020 edition of this report, based on 2019 data, the Finnish TSO was Gasum Oy and it held a derogation which was terminated at the end of 2019.

	European TSOs covered in the implementation monitoring part of the report	European TSOs covered in the effect monitoring part of the report
Greece	DESFA S.A.	DESFA S.A.
Hungary	FGSZ Ltd	FGSZ Ltd
Ireland	Gas Networks Ireland	Gas Networks Ireland
Italy[99]	Infrastrutture Trasporto Gas S.p.A. Snam Rete Gas S.p.A. Società Gasdotti Italia S.p.A.	Infrastrutture Trasporto Gas S.p.A. Snam Rete Gas S.p.A. Società Gasdotti Italia S.p.A.
Latvia	AS Conexus Baltic Grid	AS Conexus Baltic Grid
Lithuania	AB Amber Grid	AB Amber Grid
Luxembourg[100]	Creos Luxembourg S.A. (derogation)	Creos Luxembourg S.A. (derogation)
Malta[101]	Interconnect Malta Ltd. (derogation)	Interconnect Malta Ltd. (derogation)
Netherlands	BBL Company V.O.F. Gasunie Transport Services B.V.	BBL Company V.O.F. Gasunie Transport Services B.V.
Poland	GAZ-SYSTEM S.A. TGPS GAZ-SYSTEM S.A.[102]	GAZ-SYSTEM S.A. TGPS GAZ-SYSTEM S.A.
Romania	Transgaz S.A.	Transgaz S.A.
Slovakia	eustream, a.s.	eustream, a.s.
Slovenia	Plinovodi d.o.o.	Plinovodi d.o.o.
Spain[103]	Enagás Transporte S.A.U.	Enagás Transporte S.A.U.
Sweden[104]	Swedegas AB	Swedegas AB
Switzerland[105]	Trans Adriatic Pipeline AG (exemption)	Trans Adriatic Pipeline AG (exemption)

99 According to the Italian regulation (**Resolution 114/2019/R/gas of 28 March 2019**) which establishes tariff regulatory criteria for the period 2020-2023 in accordance with TAR NC requirements, the main TSO (Snam Rete Gas S.p.A.) is responsible for the calculation of the transmission tariffs with reference to the entire Italian transmission network, therefore also for the portion of the network managed by ENTSOG members Società Gasdotti Italia S.p.A. and Infrastrutture Trasporto Gas S.p.A.

100 Luxembourg benefits from a derogation set out in Directive 2009/73/EC (**Art. 49(6)**). Therefore, as for previous editions of this report, data from TSO Creos Luxembourg S.A. was not requested for this report.

101 Malta is derogated, and the future network of the prospective TSO Interconnect Malta Ltd. is not yet commissioned.

102 Polish TSO GAZ-SYSTEM indicated to ENTSOG that, as from 1 January 2023, and following the expiry of historical contracts on the **TGPS** at the end of 2022, transmission services provided by GAZ-SYSTEM on the Transit Gas Pipeline System are settled according to the tariff approved by the President of NRA ERO upon the request of GAZ-SYSTEM, prepared on the basis of the reference price methodology approved by the President of ERO. In previous years transmission services provided by GAZ-SYSTEM on the Transit Gas Pipeline System were settled according to the tariff approved by the President of ERO upon the request of EuRoPol Gaz. Before this change in the roles of GAZ-SYSTEM and EuRoPol Gaz, TGPS did not participate in editions prior to this 2024 report.

103 The status of one ENTSOG Member, Spanish TSO **Regasificadora del Noroeste S.A. (or 'Reganosa')** changed while preparations for this report were ongoing. On 29 September 2023, Reganosa ceased operations as a gas TSO, following the transfer of its ownership of transport facilities to Enagás Transporte S.A.U., and it will dedicate itself only to LNG activities. Reganosa is therefore not counted here as a Member, since the reference date for this report is 1 October 2023. Source: **Enagás 2023**.

104 In the previous report of 2022, Swedegas AB was renamed as Nordion Energi. For this 2024 report, the Swedish TSO clarified that Swedegas AB should be used, hence this name is reinstated.

105 In 2013, Trans Adriatic Pipeline AG (TAP) received an **exemption** from the Italian, Albanian, and Greek NRAs pursuant to Directive 2009/73/EC (**EC 2013**). This exemption covers requirements regarding third-party access, tariff regulation, and ownership unbundling. Therefore, data from TAP was not requested for this report. TAP, which is an ENTSOG Associated Partner, is headquartered in Switzerland.

ANNEX B INFORMATION IN RELATION TO PUBLICATION REQUIREMENTS

Please find links to the information related to Article 29 and 30, which is published on the TSO/NRA website and a guide to the information published on ENTSOG's Transparency Platform.

European TSOs covered in the implementation Monitoring Report		Link to the Article 29 and 30 information published on the TSO/NRA website
Austria	Gas Connect Austria GmbH Trans Austria Gasleitung GmbH	**E-Control**
Belgium	Fluxys Belgium S.A. Interconnector Limited[106]	**Fluxys**
Bulgaria	Bulgartransgaz EAD ICGB AD (exemption)	**Bulgartransgaz EAD** N/A (exemption)
Croatia	Plinacro d.o.o.	**Plinacro d.o.o.**
Czechia	NET4GAS, s.r.o.	**Energy Regulatory Office**
Denmark	Energinet	**Energinet**
Estonia[107]	Elering AS	**Elering AS**
Finland[108]	Gasgrid Finland Oy	**Gasgrid Finland Oy**
France	GRTgaz Teréga	**CRE**
Germany	bayernets GmbH Fluxys Deutschland GmbH Fluxys TENP GmbH GASCADE Gastransport GmbH Gastransport Nord GmbH Gasunie Deutschland Transport Services GmbH GRTgaz Deutschland GmbH Lubmin-Brandov Gastransport GmbH NEL Gastransport GmbH Nowega GmbH ONTRAS Gastransport GmbH Open Grid Europe GmbH terranets bw GmbH Thyssengas GmbH	**bayernets GmbH** **Fluxys** **Fluxys** **GASCADE Gastransport GmbH** **Gastransport Nord GmbH** **Gasunie Deutschland Transport Services GmbH** **GRTgaz Deutschland GmbH** **Lubmin-Brandov Gastransport GmbH** **NEL Gastransport GmbH** **Nowega GmbH** **ONTRAS Gastransport GmbH** **Open Grid Europe GmbH** **terranets bw GmbH** **Thyssengas GmbH**
Greece	DESFA S.A.	**DESFA S.A.**
Hungary	FGSZ Ltd	**Hungarian Energy and Public Utility Regulatory Authority**
Ireland	Gas Networks Ireland	**Gas Network Ireland**
Italy	Snam Rete Gas S.p.A. Infrastrutture Transporto Gas S.p.A. Società Gasdotti Italia S.p.A.	**Snam Rete Gas S.p.A.**
Latvia	Conexus Baltic Grid	**Conexus Baltic Grid**

106 The link given for Interconnector Limited gives information hosted on Fluxys Belgium's website, which co-owns Interconnector Limited along with Snam. The derogation received by Interconnector Limited implies that publications listed in Article 29 and Article 30 of the TAR NC are not requested from this TSO. Interconnector Limited (formerly 'Interconnector UK') is listed as a **Belgian Member of ENTSOG since the 2022 edition of this report**, no longer as a United Kingdom TSO, following the Brexit process.

107 Elering AS uses the implicit allocation mechanism instead of auctions, as allowed by the CAM Network Code. Therefore, the publication of information prior to annual yearly capacity auctions, as per Art. 29 of the TAR NC, is not applicable to Estonia. In addition, according to national legislation, there is no specific tariff period for Elering. An amendment to tariffs can be initiated by either the NRA or the TSO, in accordance with the definition for 'tariff period' in **Art. 3(23) of the TAR NC** which mandates a duration of at least one year for a tariff period.

108 Gasgrid Finland Oy uses the implicit allocation mechanism instead of auctions, as allowed by the CAM Network Code (**CAM NC**). Therefore, the publication of information prior to annual yearly capacity auctions, as per Art. 29 of the TAR NC, is not applicable to Finland.

European TSOs covered in the implementation Monitoring Report		Link to the Article 29 and 30 information published on the TSO/NRA website
Lithuania	AB Amber Grid	**AB Amber Grid**
Luxembourg	Creos Luxembourg S.A. (derogation)	N/A (derogation)
The Netherlands	BBL Company V.O.F.[109] Gasunie Transport Services B.V.	**BBL Company V.O.F.** **Authority for Consumers and Markets**
Poland	GAZ-SYSTEM S.A. TGPS GAZ-SYSTEM S.A.	**GAZ-SYSTEM S.A.** **TGPS GAZ-SYSTEM S.A.**
Portugal	REN – Gasodutos, S.A.	**ERSE**
Romania	Transgaz S.A.	**Transgaz S.A.**
Slovakia	eustream a.s.	**eustream a.s.**
Slovenia	Plinovodi d.o.o.	**Plinovodi d.o.o.**
Spain	Enagás S.A.	**CNMC**
Sweden	Swedegas AB	**Swedegas AB**
Switzerland	Trans Adriatic Pipeline AG (exemption)	N/A (exemption)

ENTSOG's Transparency Platform – link to published information on TSO's or NRA's website

ENTSOG's Transparency Platform has a link for all TSOs to the information published on their website, or their NRAs website, depending on who has publication responsibility[110].

ENTSOG's Transparency Platform – standardised table

ENTSOG's Transparency Platform has a standardised table which publishes the information for all TSOs on the reserve prices for standard capacity products for firm capacity and for standard capacity products for interruptible capacity, and the flow-based charge where applied[111].

109 The derogation received by BBL implies that publications listed in Article 29 and Article 30 of the TAR NC are not requested from this TSO.

110 This link can be accessed by going into **ENTSOG's Transparency Platform** – click 'Operators' on the top toolbar, click on the panel for the TSO you are looking for information on, under 'Links' click 'Tariff information page', this will bring you directly to the TSO's or NRA's website.

111 Data can be accessed per TSO or IP directly from **ENTSOG's Transparency Platform** – click the 'Tariff Data' tab, enter the relevant TSO or IP name into the search box, and fill in the relevant date range on the right-hand side.

ANNEX C CONSULTATION TIMELINES AND NRA MOTIVATED DECISIONS

Please find information on final consultations (Article 26) and NRA motivated decisions (Article 27(4) below – including timelines and responsibility per MS.[112,113,114]

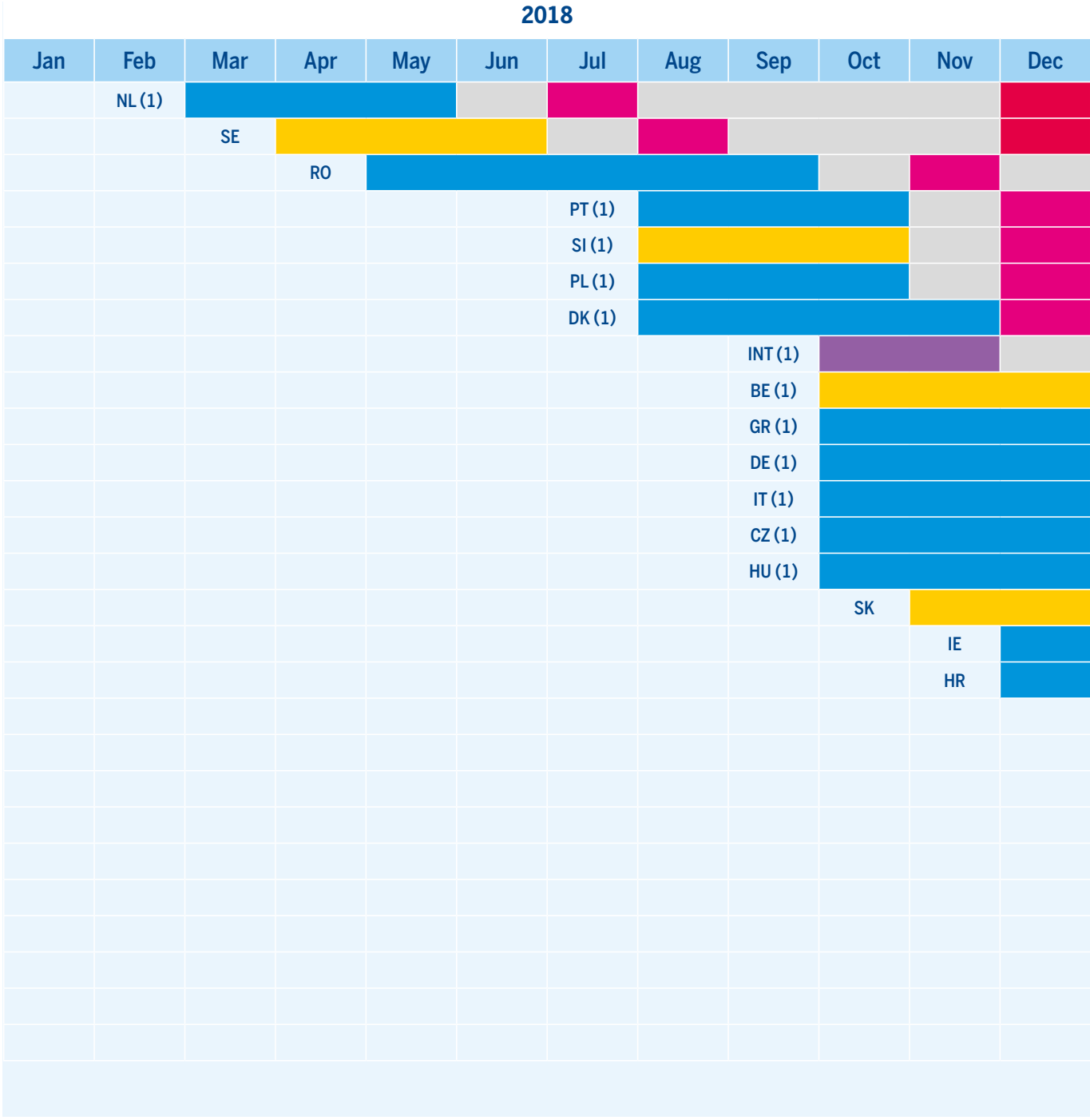
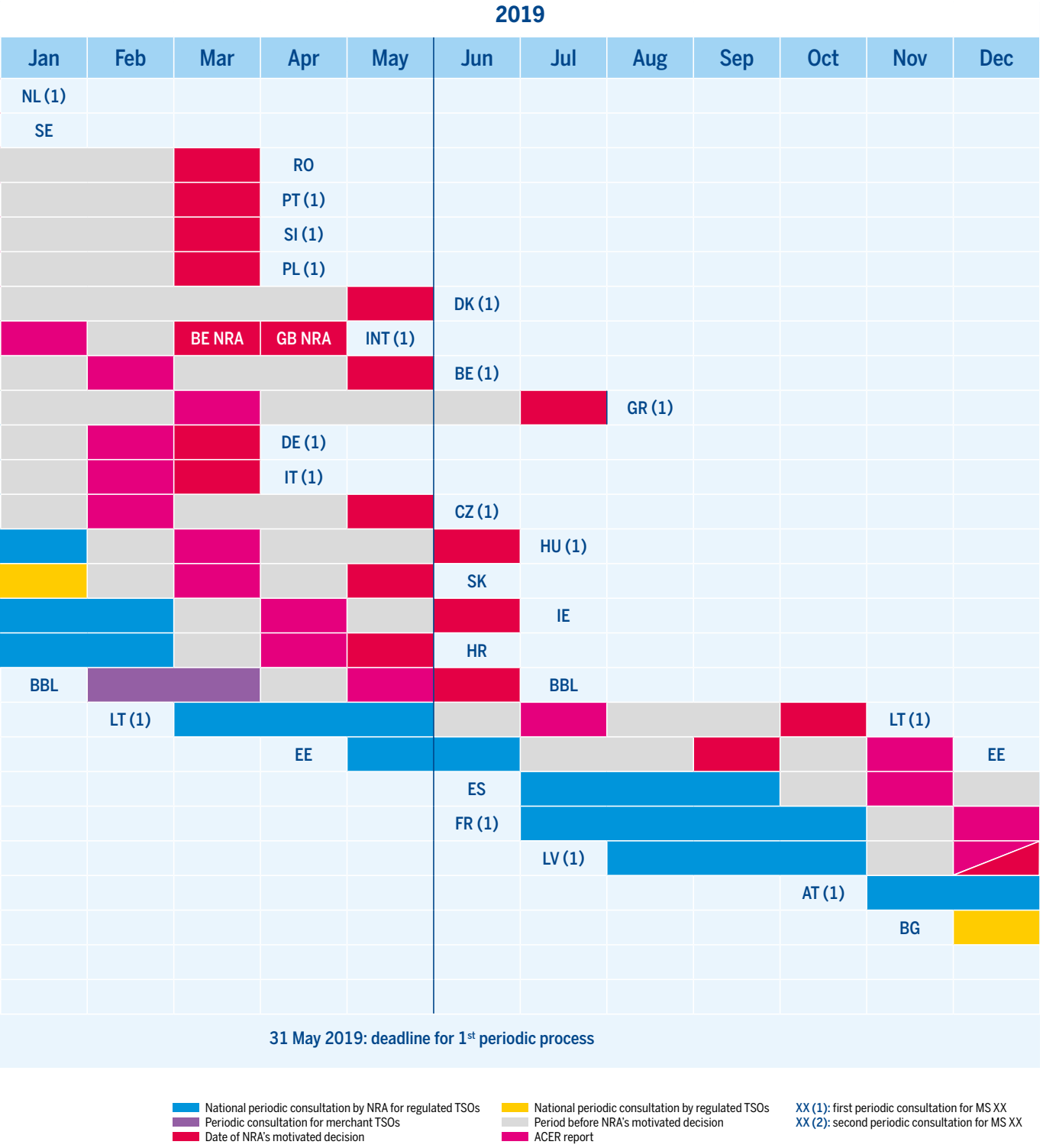


Figure 62: Timeline of TAR NC periodic consultation processes from 2018–2023

112 This is an overview of the timelines for each consultation. For exact dates, additional information on the final consultations and NRAs' motivated decisions, the **ACER's website** compiles valuable information.

113 Following the Brexit process, United Kingdom TSOs were not requested to participate in this 2024 edition based on 2023 data. The reader is invited to consult previous editions of this report until 2022, where these TSOs contributed, and where the Annex on timelines depicted the status for Great Britain and Northern Ireland.

114 Until the 2022 version of this report inclusively, Interconnector Limited (INT) was named 'Interconnector UK' (IUK).


2019
Jan
Feb
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NL (1)
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PT (1)
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PL (1)
DK (1)
BE NRA
GB NRA
INT (1)
BE (1)
GR (1)
DE (1)
IT (1)
CZ (1)
HU (1)
SK
IE
HR
BBL
BBL
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EE
ES
FR (1)
LV (1)
AT (1)
BG
31 May 2019: deadline for 1st periodic process
National periodic consultation by NRA for regulated TSOs
Periodic consultation for merchant TSOs
Date of NRA's motivated decision
National periodic consultation by regulated TSOs
Period before NRA's motivated decision
ACER report
XX (1): first periodic consultation for MS XX
XX (2): second periodic consultation for MS XX

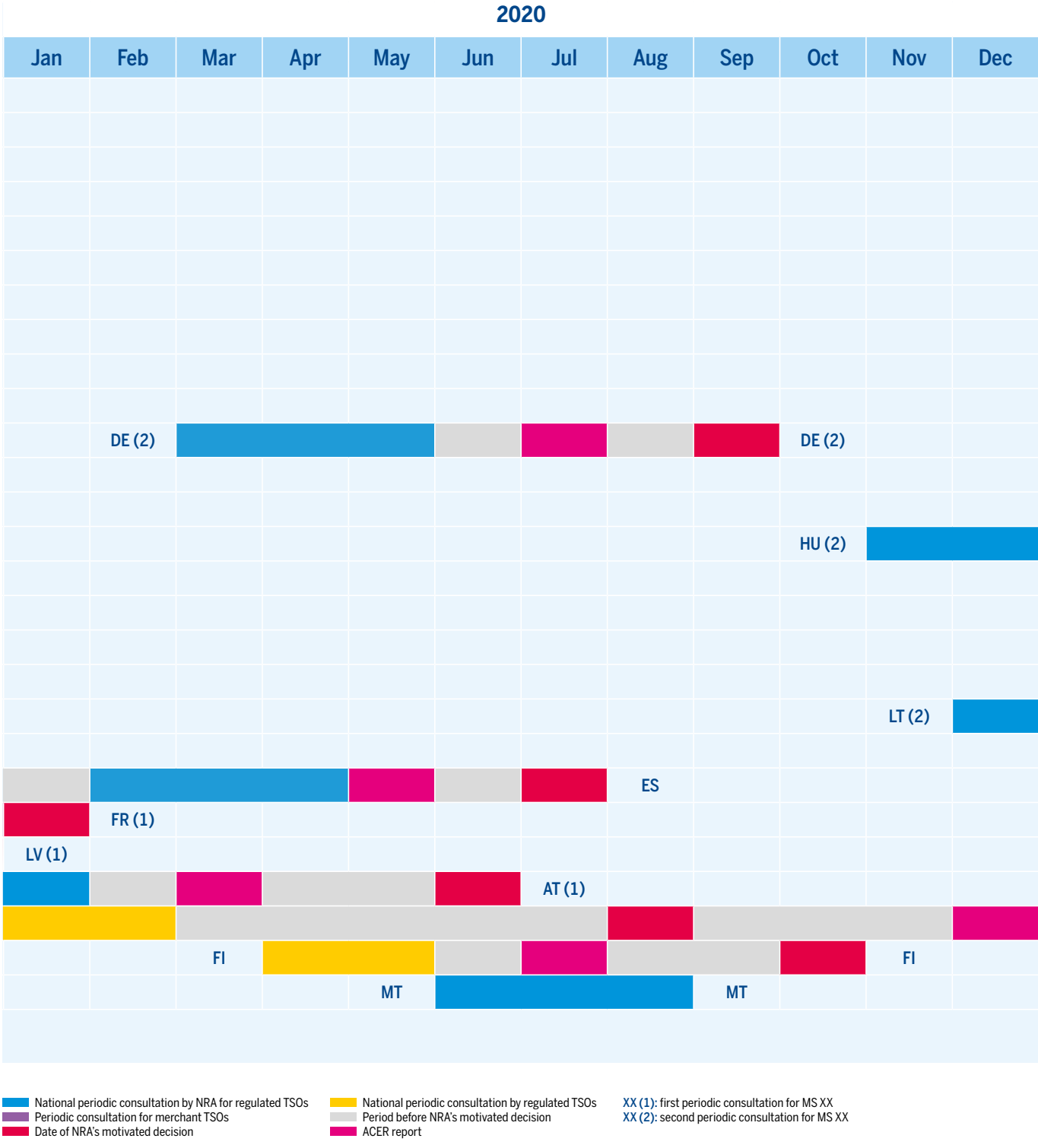
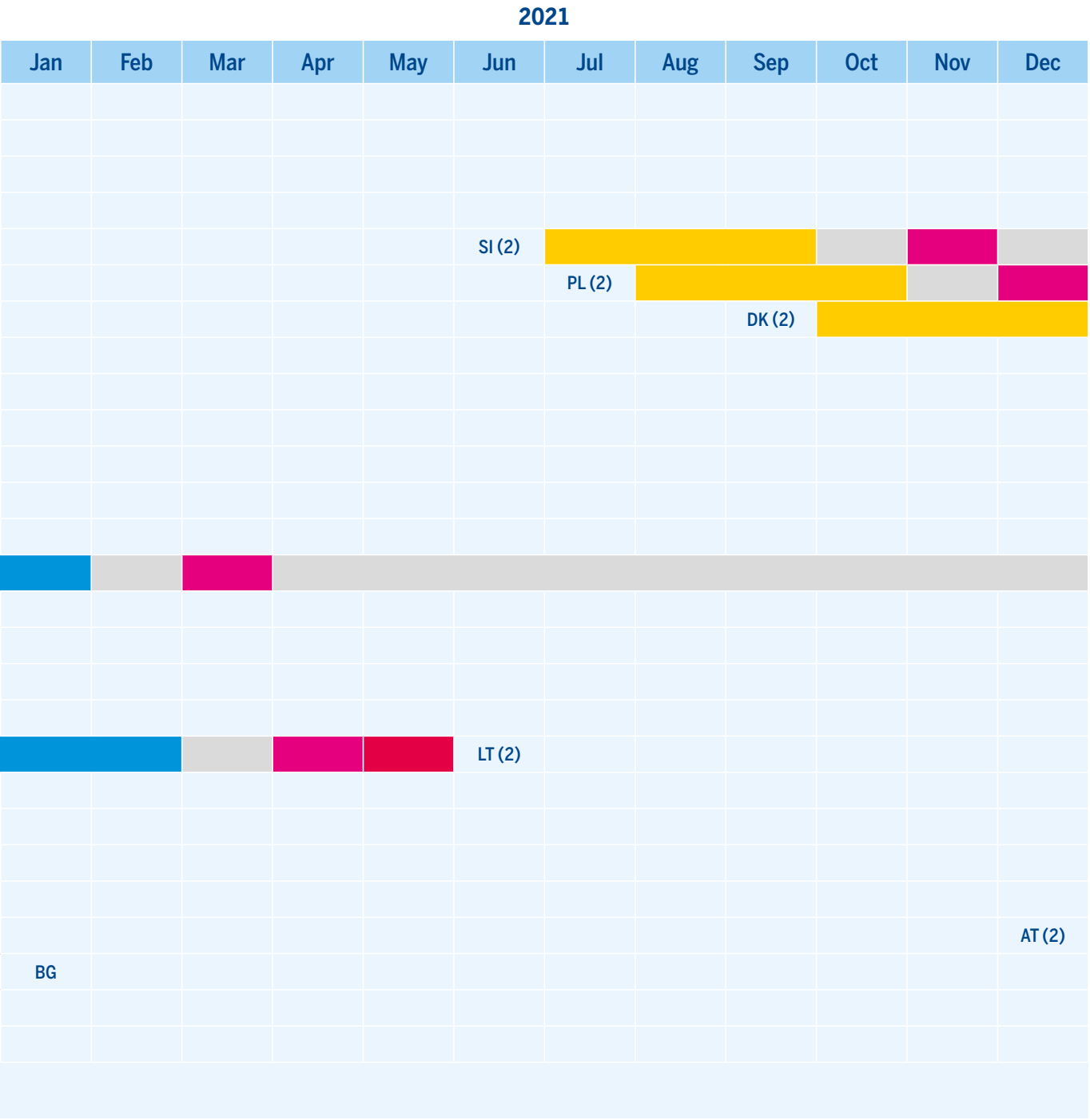


Figure 62: Timeline of TAR NC periodic consultation processes from 2018–2023


2021
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PL (2)
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LT (2)
AT (2)
BG

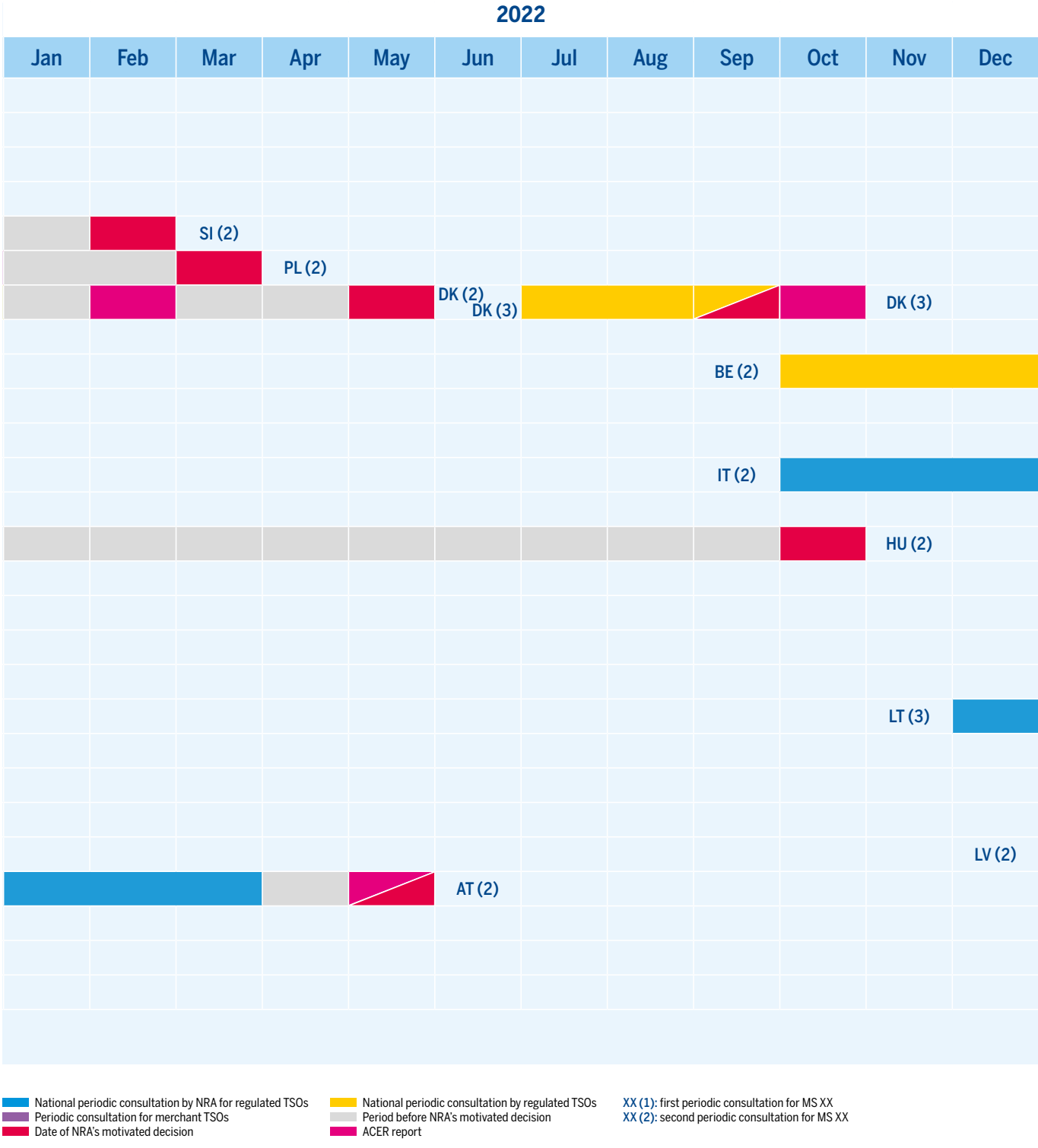
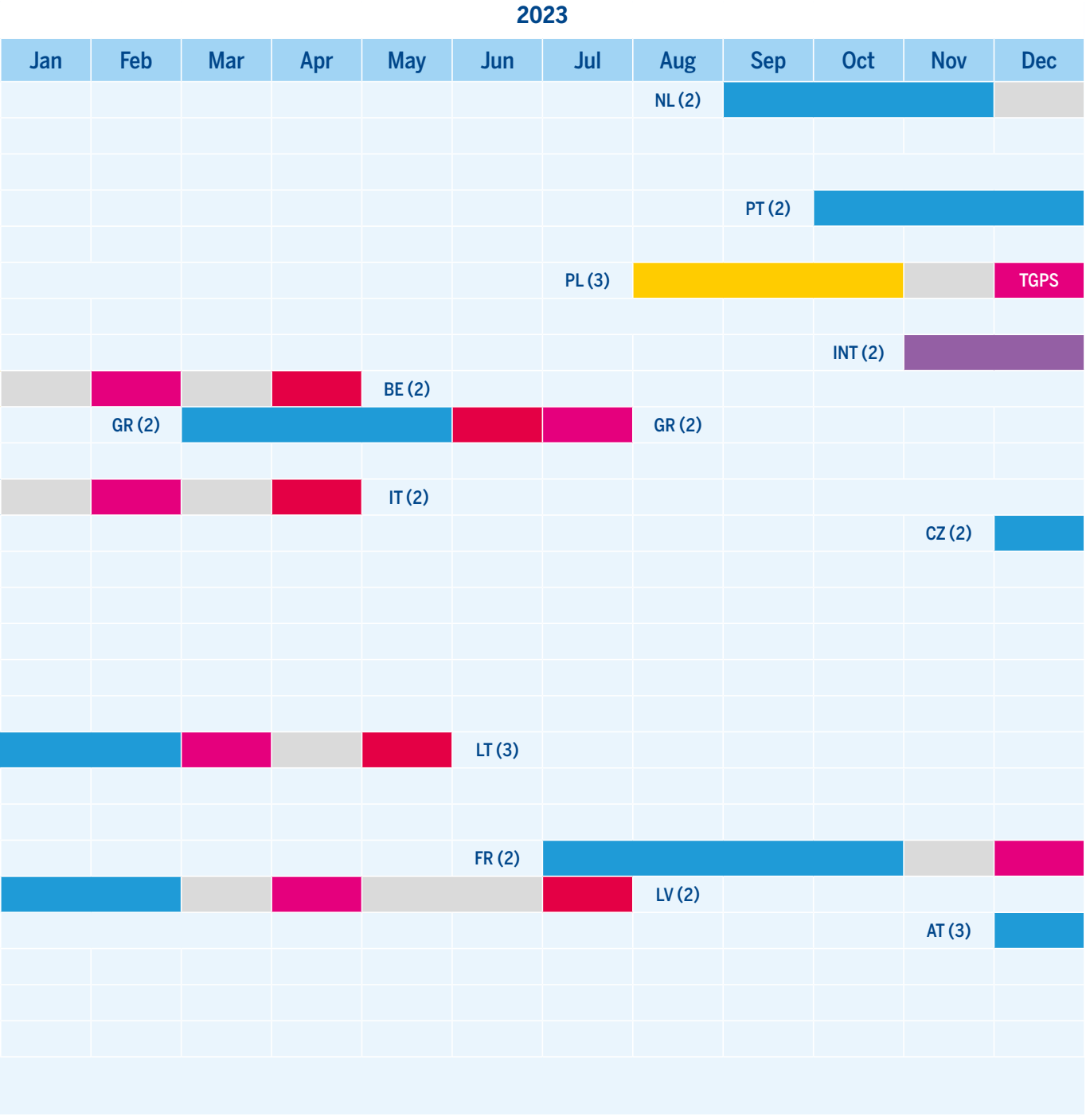


Figure 62: Timeline of TAR NC periodic consultation processes from 2018–2023


2023
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Dec
NL (2)
PT (2)
PL (3)
TGPS
INT (2)
BE (2)
GR (2)
GR (2)
IT (2)
CZ (2)
LT (3)
FR (2)
LV (2)
AT (3)

ANNEX D OVERVIEW OF EUROPEAN TSOs AND TARIFF BACKGROUND INFORMATION

Please find an overview of European TSOs with further background information below (data prevailing on 1 October 2023).[115]

Member State or Third Country	TSO	Type of payable price	Prevailing Tariff period	Prevailing Regulatory period	RPM
Austria	Gas Connect Austria GmbH Trans Austria Gasleitung GmbH	Floating	1 Jan 2021 – 31 Dec 2024	1 Jan 2021 – 31 Dec 2024	Virtual Point
Belgium	Fluxys Belgium S.A. Interconnector Limited (merchant TSO)	Floating Fixed	1 Jan 2020 – 31 Dec 2023 1 Oct 2023 – 30 Sep 2024	1 Jan 2020 – 31 Dec 2023 N/A	CWD (or variant) N/A
Bulgaria	Bulgartransgaz EAD	Floating	1 Oct 2023 – 30 Sep 2024	1 Oct 2020 – 30 Sep 2025	Matrix
Croatia	Plinacro d.o.o.	Floating	1 Jan 2021 – 31 Dec 2025	1 Jan 2021 – 31 Dec 2025	Postage Stamp
Czechia	NET4GAS s.r.o.	Floating + Fixed	1 Jan 2023 – 31 Dec 2023	1 Jan 2021 – 31 Dec 2025	CWD (or variant)
Denmark	Energinet	Floating	1 Oct 2022 – 31 Dec 2023	1 Jan2023 – 31 Dec 2025	Postage Stamp
Estonia	Elering AS	N/A[120]	1 Jan 2020 – Ongoing[121]	1 Oct 2020 – Ending not defined	Postage Stamp
Finland	Gasgrid Finland Oy	N/A[123]	1 Jan 2023 – 31 Dec 2023	1 Jan 2020 – 31 Dec 2023	Postage Stamp
France	GRTgaz Teréga	Floating	1 Apr 2023 – 31 Mar 2024	1 Apr 2020 – 31 Mar 2024	CWD (or variant)
Germany	bayernets GmbH Fluxys Deutschland GmbH Fluxys Tenp GmbH GASCADE Gastransport GmbH Gastransport Nord GmbH Gasunie Deutschland Transport Services GmbH GRTgaz Deutschland GmbH Lubmin-Brandov Gastransport GmbH NEL Gastransport GmbH Nowega GmbH ONTRAS Gastransport GmbH Open Grid Europe GmbH terranets bw GmbH Thyssengas GmbH	Floating	1 Jan 2023 – 31 Dec 2023	1 Jan 2023 – 31 Dec 2027	Postage Stamp
Greece	DESFA S.A.	Floating	1 Jan 2023 – 31 Dec 2023	1 Jan 2023 – 31 Dec 2023[131]	CWD (or variant)

115 Since 1 January 2022, United Kingdom TSOs are no longer ENTSOG Members. For this 2024 report on 2023 data, United Kingdom TSOs were therefore not requested to participate, and the status of Great Britain and Northern Ireland is no longer indicated in this Annex.

116 These discounts for interruptible capacity are those under the framework of the TAR NC only, i.e., per Art. 16. Since this article belongs to Chapter III, which only applies – by default – to IPs with the meaning of the CAM NC Art. 3(2) (bookable IPs at border of an entry-exit system), this question is deemed not applicable (N/A) for MSs without any IP, unless stated otherwise by TSOs.

117 Source: **Fluxys Belgium**

118 Source: **Eru.gov.cz**

119 Source: **Energinet (2023)**

120 Elering AS has no IP according to the definition for IP in the CAM NC (Art. 3(2)). As payable price only applies at IPs (Art. 24 of TAR NC), the question of floating payable price is not applicable.

121 Source: **Elering (2024)**. Ending date not defined according to national law.

122 No bookable IP under the meaning of the CAM NC.

123 Gasgrid Finland Oy has no IP according to the definition for IP in the CAM NC (Art. 3(2)), since the Balticconnector point is not subject to CAM NC procedures. As payable price only applies at IPs (Art. 24 of TAR NC), the question of floating payable price is not applicable.

Adjustments: Benchmarking (B), Equalisation (E), Rescaling (R), None, or Not Available (N/A)	Entry capacity split	Exit capacity split	Discounts: storage	Discounts: LNG	Discounts: interruptible [116]
B, E, R	20.6 %	79.4 %	75 % (average entry and exit)	No LNG terminal	Ex-ante + Ex post
E	33 %[117]	67 %	75 % (average entry and exit)	0.0 %	Ex-ante
B	N/A	N/A	No storage	No LNG terminal	Ex-ante
E, R	50 %	50 %	100 %	No LNG terminal	Ex-post
E	60 %	40 %	95 % (average entry and exit)	15.0 %	Ex-post
E	15 %[118]	85 %	100 %	No LNG terminal	Ex-post
None	53 %[119]	47 %	100 %	No LNG terminal	Ex-ante
B	9 %	91 %	No storage	No LNG terminal	N/A[122]
N/A	12 %[124]	88 %	No storage	N/A	N/A
E	34 %[125]	66 %	80 % to 100 %[126]	0.0 % or N/A	Ex-ante
B[127], R	33.0 %[128]	67.0 %	75%[129]	40 %[130]	Ex-ante
E, R	50 %[132]	50 %	No storage	30.0 %[133]	Ex-ante

124 Source: **Gasgrid Finland** (2023)

125 Source: **GRTgaz** (2023)

126 Different approaches for storage and LNG discounts apply for GRTgaz and Teréga. This is why there are different ranges shown in the columns. Also see: **CRE (2023)**

127 The benchmarking adjustment according to Article 6(4)(a) of the TAR NC is applied by one TSO only in Germany (bayernets GmbH), following a **decision** of the German NRA. Rescaling is applied by all German TSOs, except one.

128 Source: **bayernets (2022)**

129 One source for storage discount in Germany: **Gastransport Nord (2022)**. For one German TSO the storage discount is not applicable due to no access to storage.

130 Source: **Bundesnetzagentur (2022)** – but only for yearly and quarterly products.

131 DESFA confirmed in 2023 that calendar year 2023 is a standalone regulatory period in Greece. Standardly, the regulatory Period is 4 years (01.01.2024-31.12.2027).

132 Source: **DESFA (2022) 2023_TARIFF_NC_ART30_new_1_2.pdf (desfa.gr)**

133 Source: **ACER (2023)**

Member State or Third Country	TSO	Type of payable price	Prevailing Tariff period	Prevailing Regulatory period	RPM
Hungary	FGSZ Ltd	Floating	1 Oct 2023 – 30 Sep 2024	1 Oct 2021 – 30 Sep 2025	Postage Stamp
Ireland	Gas Networks Ireland	Floating	1 Oct 2023 – 30 Sep 2024	1 Oct 2022 – 30 Sep 2027[135]	Matrix
Italy	Snam Rete Gas S.p.A. Infrastrutture Trasporto Gas S.p.A. Società Gasdotti Italia S.p.A.	Floating	1 Jan 2023 – 31 Dec 2023	1 Jan 2020 – 31 Dec 2023	CWD (or variant)
Latvia	Conexus Baltic Grid	Fixed	1 Oct 2022 – 30 Nov 2023	1 Oct 2022 – 30 Nov 2023	Postage Stamp
Lithuania	AB Amber Grid	Floating	1 Jan 2023 – 31 Dec 2023	1 Jan 2019 – 31 Dec 2023	Postage Stamp
Luxembourg	Creos Luxembourg S.A. (derogation)	N/A	N/A	N/A	N/A
Malta	Interconnect Malta Ltd. (prospective TSO with a derogation)	N/A	N/A	N/A	N/A
The Netherlands	BBL Company V.O.F. (merchant TSO)	Fixed	1 Oct 2023 – 1 Oct 2024	1 Oct 2023 – 1 Oct 2024	N/A
	Gasunie Transport Services B.V.	Floating	1 Jan 2023 – 31 Dec 2023	1 Jan 2022 – 31 Dec 2026	Postage Stamp
Poland	GAZ-SYSTEM S.A. TGPS GAZ-SYSTEM S.A.[142]	Floating Floating	1 Jan 2023 – 31 Dec 2023 1 Jan 2023 – 31 Dec 2023	1 Jan 2023 – 31 Dec 2023 1 Jan 2023 – 31 Dec 2023	Postage Stamp CWD (or variant)
Portugal	REN – Gasodutos, S.A.	Floating	1 Oct 2023 – 30 Sep 2024	1 Jan 2020 – 31 Dec 2023	CWD (or variant)
Romania	Transgaz S.A.	Floating	1 Oct 2023 – 30 Sep 2024	1 Oct 2019 – 30 Sep 2024	Postage Stamp
Slovakia	eustream, a.s.	Fixed	1 Jan 2023 – 31 Dec 2027	1 Jan 2023 – 31 Dec 2027	Postage Stamp
Slovenia	Plinovodi d.o.o.	Floating	1 Jan 2023 – 31 Dec 2023	1 Jan 2022 – 31 Dec 2024	Matrix
Spain[146]	Enagás S.A.	Floating	1 Oct 2023 – 30 Sep 2024	1 Oct 2021 – 30 Sep 2026	CWD (or variant)
Sweden	Swedegas AB[147]	N/A[148]	1 Oct 2023 – 30 Sep 2024	1 Jan 2023 – 31 Dec 2026	Postage Stamp
Switzerland	Trans Adriatic Pipeline AG (exemption)	N/A	N/A	N/A	N/A

134 Source: **MEKH (2023)**

135 Source: **CRU (2023)**

136 Source: **Gas Networks Ireland (2023)**

137 CAM NC is applied by the Irish TSO at the point with the UK, now a third country. Hence, the question of the payable price is applicable, with the floating approach used.

138 Source: **ARERA (2022)**

139 Source: **ACER (2023)**

140 Source: **Amber Grid (2023)**

141 Source: **GAZ-SYSTEM (2022)**

142 Polish TSO GAZ-SYSTEM indicated to ENTSOG that, as from 1 January 2023, and following the expiry of historical contracts on the TGPS at the end of 2022, transmission services provided by GAZ-SYSTEM on the Transit Gas Pipeline System are settled according to the tariff approved by the President of NRA ERO upon the request of GAZ-SYSTEM, prepared on the basis of the reference price methodology approved by the President of ERO. In previous years transmission services provided by GAZ-SYSTEM on the Transit Gas Pipeline System were settled according to the tariff approved by the President of ERO upon the request of EuRoPol Gaz. Before this change in the roles of GAZ-SYSTEM and EuRoPol Gaz, TGPS did not participate in editions prior to this 2024 report.

Adjustments: Benchmarking (B), Equalisation (E), Rescaling (R), None, or Not Available (N/A)	Entry capacity split	Exit capacity split	Discounts: storage	Discounts: LNG	Discounts: interruptible [116]
R	40 %[134]	60 %	95% (average entry and exit)	No LNG terminal	Ex-ante
R	33 %[136]	67 %	No storage	No LNG terminal	Ex-ante[137]
E, R	28 %[138]	72 %	50 %	0.0 %	Ex-ante
None	2 %[139]	98 %	100 %	No LNG terminal	Ex-ante
E	87 %[140]	13 %	No storage	No LNG terminal	Ex-post and Ex-ante
N/A	N/A	N/A	No storage	No LNG terminal	N/A
N/A	N/A	N/A	No storage	No LNG terminal	N/A
None	N/A	N/A	No storage	No LNG terminal	Ex-ante discounts only (derogation is on Art. 13)
R	40 %	60 %	60 %	0.0 %	Ex-ante
None	45 %[141]	55 %	80 %	100.0 %	Ex-ante
None	50 %[143]	50 %	No storage	No LNG terminal	Ex-ante
E, R	28 %	72 %	100 %	0.0 %	Ex-ante
None	50 %	50 %	50 %	No LNG terminal	Ex-ante + Ex-post[144]
B	38 %	62 %	0 %[145]	No LNG terminal	Ex-ante
B, R	16 %	84 %	No storage	No LNG terminal	Ex-post
E	50 %	50 %	100 %	13.9%	Ex-ante + Ex-post
None	0 %	100 %	100 %[149]	No LNG terminal	N/A[150]
N/A	N/A	N/A	No storage	No LNG terminal	N/A

143 Source: **GAZ-SYSTEM TGPS (2022)**

144 Source: **Transgaz (2023)**

145 Source: **eustream (2018)**

146 The status of one ENTSOG Member, Spanish TSO Regasificadora del Noroeste S.A. (or 'Reganosa') changed while preparations for this report were ongoing. On 29 September 2023, Reganosa ceased operations as a gas TSO, following the transfer of its ownership of transport facilities to Enagás, and it will dedicate itself only to LNG activities. Reganosa is therefore not counted here as a Member, since the reference date for this report is 1 October 2023. Source: **Enagás 2023**

147 In the previous edition of this report, published in 2022, Swedegas AB was renamed as Nordion Energi. For this 2024 report on 2023 data, the Swedish TSO clarified that Swedegas AB should be used, hence this name is reinstated.

148 Swedegas AB has no IP according to the definition for IP in the CAM NC (Art. 3(2)), since the connection point with Denmark is not subject to booking procedures. As payable price only applies at IPs (Art. 24 of TAR NC), the question of floating payable price is not applicable.

149 **ACER** noted in 2018 that a 100% discount was proposed for the mothballed storage facility in Sweden. For the **periodic consultation** launched in March 2024, Swedegas AB observes that the Skallen storage facility is back in operation. The Swedish TSO proposes to keep the value of a 100 % discount.

150 No bookable IP under the meaning of the CAM NC.

ANNEX E KEY TARIFF FEATURES IN EUROPE – MAP OVERVIEW

Please find an overview of key tariff features in Europe below (data prevailing on 1 October 2023). [151]

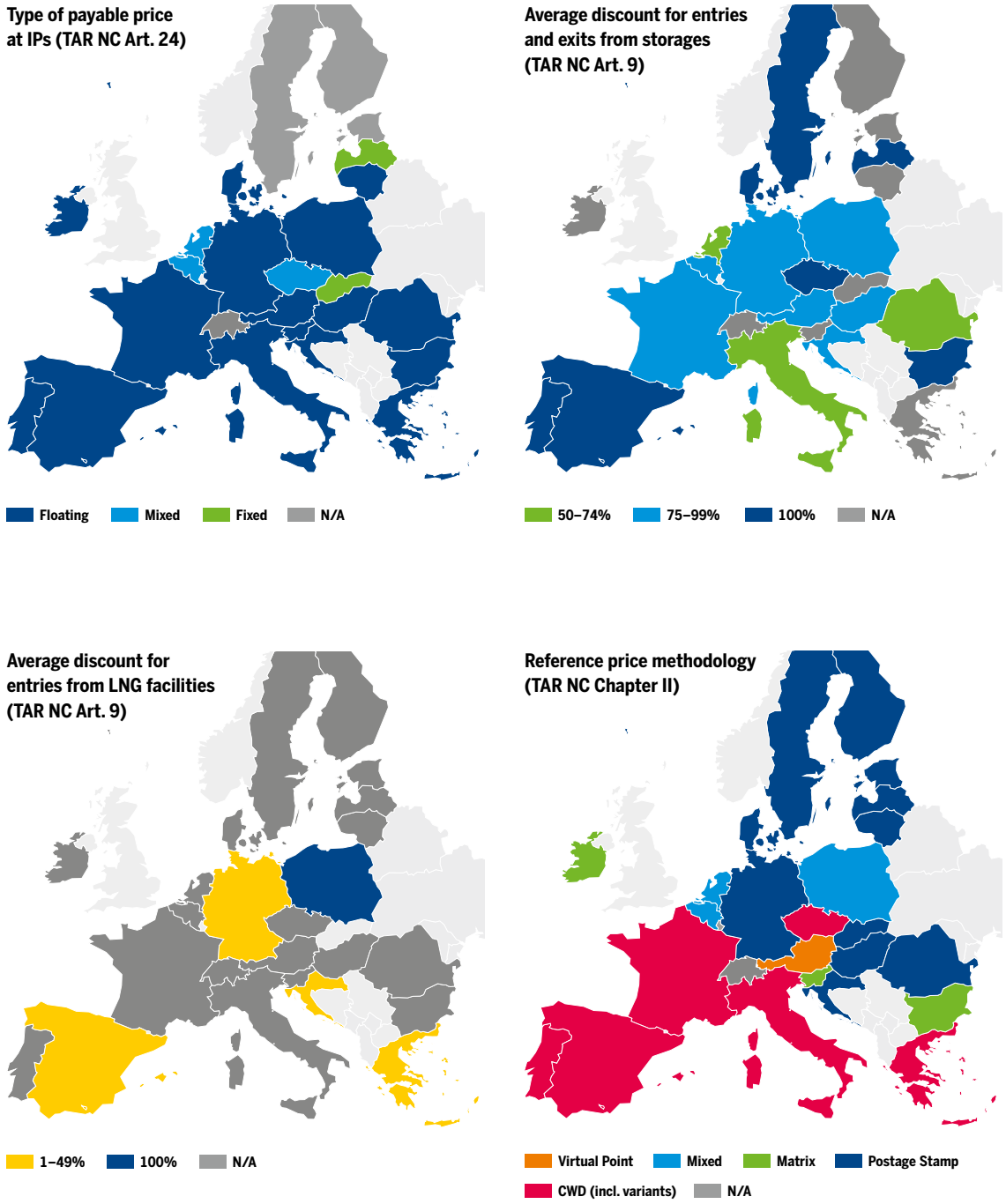

Figure 63: Key tariff features in Europe – map overview

151 For several MSs, mixed approaches exist regarding payable price or RPM, in case several TSOs operate under different regimes or regulations (e.g., price cap and non-price cap; or regulated and merchant). These cases exist in Belgium, the Netherlands, and Czechia. Since 1 January 2022, United Kingdom TSOs are no longer ENTSOG Members. For this 2024 report on 2023 data, United Kingdom TSOs were therefore not requested to participate, and the status of Great Britain and Northern Ireland is no longer indicated in this Annex.

ABBREVIATIONS

ACER	Agency for the Cooperation of Energy Regulators established by Regulation (EC) No 713/2009
AD	Application Date
CAA	Cost Allocation Assessment
CAM NC	Commission Regulation (EU) 2017/459 of 16 March 2017 establishing a Network Code on capacity allocation mechanisms in gas transmission systems and repealing Regulation (EU) No 984/2013 (OJ L 72, 17.3.2017, p. 1)
CWD	Capacity-Weighted Distance
EC	European Commission
EM	Effect Monitoring
ENTSOG	European Network of Transmission System Operators for Gas
EU	European Union
Gas Directive	Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC (OJ L 211, 14.8.2009, p. 94)
Gas Regulation	Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005 (OJ L 211, 14.8.2009, p. 36)
IDoc	Implementation Document for the Network Code on Harmonised Transmission Tariff Structures for Gas
IM	Implementation Monitoring
IP	Interconnection Point, as defined by Article 3(2) of the CAM NC
ITC	Inter-transmission system operator compensation
LSO	LNG System Operator
MS(s)	Member State(s)
NRA	National Regulatory Authority
NTS	Non-Transmission Services
RPM	Reference Price Methodology
SSO	Storage System Operator
TAR NC	Commission Regulation (EU) 2017/460 of 16 March 2017 establishing a Network Code on harmonised transmission tariff structures for gas (OJ L 72, 17.3.2017, p. 29)
TP	Transparency Platform
TS	Transmission Services
TSO	Transmission System Operator

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