



# BALANCING NETWORK CODE

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## Implementation and Effect Monitoring Report 2024

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# PART 1



## SIXTH ENTSOG MONITORING REPORT ON IMPLEMENTATION OF THE BALANCING NETWORK CODE

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2024

COVERS GY 2021/22 AND GY 2022/23



Picture courtesy of Enagás

## EXECUTIVE SUMMARY

According to Article 8(8) of the Regulation (EC) 715/2009 ENTSG “shall monitor and analyse the implementation of the network codes and the guidelines adopted by the European Commission in accordance with Article 6(11), and their effect on the harmonisation of applicable rules aimed at facilitating market integration”.

This is the sixth time ENTSG monitors the implementation of the BAL NC and the fifth time that it evaluates its effects.

This report reflects the status of the BAL NC implementation as at the reference date 1 October 2023, covering the most recent updates implemented in gas years 2021/22 and 2022/23, and assesses the effect of the BAL NC by comparing data from gas years 2017/18 to 2022/23 (to the extent possible).

To carry out the monitoring analysis, information was collected through the completion of questionnaires by TSOs and other entities with balancing responsibilities<sup>1</sup> in EU member states<sup>2</sup>.

The results of the BAL NC Monitoring report will be published in the ENTSG Annual Report 2023.

The **Implementation Monitoring Report** shows again further progress in fully implementing the provisions of BAL NC compared to the previous monitoring report.

Compared to the previous Implementation Monitoring Report (reference date 1 October 2021), Greece ended the use of **interim measures**. Only Ireland and Slovakia still have interim measures in place. The reason for still having interim measures

in force is the lack of sufficient short-term liquidity in the wholesale gas market and, for Ireland, that the existing tolerances are needed to support the development of injection of renewable gas.

The interim measures still in force are intended to be lifted once well-functioning trading venues are established and market liquidity is developed.

By 1 October 2023, there were **trading platforms** in almost all balancing zones except Slovakia. In Greece a trading platform was established during 2022. A trading platform is also envisaged in Slovakia in the near future, but until then a **balancing platform** will be used.

**Balancing services** are still procured in six balancing zones (Germany (DE-THE), Finland, Greece, Latvia (LVEE), Poland (PL-H) and Slovenia) when STSPs were not providing the necessary response to keep transmission network within its operational limits, in absence of a liquid trading platform or to respond to specific system needs.

**Daily imbalance charges**, according to Art. 19-23 of the BAL NC, have been implemented by TSOs in all countries except for Slovakia, where interim imbalance charges apply.

<sup>1</sup> Market Area Managers in Germany, Austria, Belgium, and Enagás in its role of Technical System Manager in Spain.

<sup>2</sup> UK TSOs are no longer members of ENTSG as of 1 January 2022. As a result, UK TSOs did not participate in the data collection and were no part of the analyses in this report.



As of the start date of this report, **within day obligations** (WDOs) were already in force in Austria, Belgium, in both BE-H and BE-L balancing zones, Germany and the Netherlands, and during the reporting period they were also introduced in the Joint Balancing Zone Denmark-Sweden and in Hungary.

In all countries, the **neutrality arrangements** have been implemented as per BAL NC.

TSOs from five countries, i. e. France, Italy, Poland, Romania and Spain, have reported that cases of **default payment** by network users occurred during the reporting period. In all cases, the credit risk measures implemented have been activated as intended.

By 1 October 2023, almost all countries had implemented the requirements of BAL NC on **information provision**, with the exception of Greece, where implementation of non-daily metered provisions is still ongoing.

Compared to the previous Implementation Monitoring report, apart from Czechia, France, the Netherlands and Portugal, Hungary now also offers a **linepack flexibility service** (LFS).

TSOs in seven balancing zones (Austria, Germany, Denmark-Sweden, Greece, Hungary, Lithuania and Slovenia) have reported updates to the national balancing rules. Further changes in the national balancing rules have been reported as under implementation in four countries (Finland, Greece, the Netherlands and Slovakia). Additional changes can be expected in the future to enable the integration of renewable and low-carbon gases.

New **balancing zone mergers** have been accomplished on 1 October 2021: the merger of the National and Transit balancing zones came into force in Bulgaria, as did the merger of the gas market hubs Gaspool and NetConnect Germany into the joint market area Trading Hub Europe (THE) in Germany.

The **Effect Monitoring Report** focusses on the effects of the BAL NC on EU balancing zones at the end of GY 2022/23 (until the reference date of 1 October 2023), based on five indicators. For some indicators, the evolution over the last six gas years (GY 2017/18–GY 2022/23) has also been assessed. This Effect Monitoring report shows for the first time values of the indicators for the EU as a whole (EU-25 member states, without Cyprus and Malta holding derogations).

**Indicator BAL.1** continuously shows an increased use of Short Term Standardised Products as a tool for TSOs to undertake balancing actions and a progressive reduction of balancing services to only 0.21 % in GY 2022/23, particularly.

**Indicator BAL.2.1** shows that the level of TSO/MAM's balancing action volume remains below 1 % for most balancing zones, signalling that the percentage of TSOs/MAM's balancing action is overall relatively small compared to the total gas volume entering each balancing zone.

In the majority of the balancing zones, the volume of TSO/MAMs balancing action volumes decreased compared to the previous reporting periods.

In some balancing zones cross-border flows have an impact on the overall gas quantities entering the market, which is more evident when comparing the TSO/MAM balancing action volume with the domestic end-users consumption (**indicator BAL.2.2**).

Assessing the level of network users' imbalances, **indicator BAL.3** shows less favourable values compared to the previous report. In most markets, distortions due to the invasion in Ukraine seems to have it made harder for network users to balance their portfolios themselves, especially in GY 2021/22 where higher imbalance volumes met lower market volumes which compounded the negative impact on indicator BAL.3. However, in most balancing zones, the residual imbalance level still was equal or less than 2 % of the total market volume.

Finally, **indicator BAL.4** is used to analyse the average marginal cost borne by the network users for being imbalanced. It is noted that in only four balancing zones (compared to nine in the previous report) the average marginal cost for network users to be imbalanced corresponds to the level of the small adjustment which is applied to determine the daily imbalance charges. Also this indicator seems to be negatively impacted by the geopolitical situation. While there are only five countries that offer a linepack flexibility service, it can be observed that the use of such an LFS has a positive impact for the network user in terms of average cost paid per imbalanced MWh of gas.



# INTRODUCTION

The Balancing Network Code (BAL NC) was published on 27 of March 2014 and entered into force on 16 April 2014. It is applicable to balancing zones within the borders of the EU and sets out the regulatory framework to harmonise gas balancing regimes in Europe and to facilitate gas trading across balancing zones. The BAL NC establishes gas balancing rules, including network-related rules on nomination procedures, imbalance charges, settlement processes associated with daily imbalance charges and provisions on operational balancing.

The BAL NC has been applicable since 1 October 2015 but, according to Article 52(1), its application could have been postponed until 1 October 2016, if approved by the National Regulatory Authority (NRA) and provided no interim measures were applied. In the absence of sufficient liquidity of the short-term wholesale gas market and upon approval by the NRA, BAL NC allowed TSOs to apply interim measures according to Articles 45 to 50. Article 45(4) states that interim measures must be terminated by April 2019<sup>3</sup>.

According to Article 2(3), the BAL NC does not apply in Member States that hold a derogation in accordance with Article 49 of the Gas Directive<sup>4</sup>.

- ▲ Cyprus holds derogations according to Article 49(1), (2), (6) as long as they remain an isolated and emergent market without a gas transmission system;

- ▲ Malta continues to hold a derogation according to Article 49(6) since the future network of the prospective TSO Interconnect Malta is not yet commissioned;

- ▲ Luxembourg still holds a derogation under Article 49(6), allowing it to derogate from Article 9 on transmission systems unbundling. Nevertheless, Luxembourg and Belgium have established a common market area (the BeLux H-zone), which includes the high-calorific gas network of Creos Luxembourg and of the high-calorific gas network of Fluxys Belgium. Data for Luxembourg has been provided via the Belgian TSO (Fluxys).

In this Report ENTSG continues to monitor the implementation and the effects of the BAL NC at the date of 1 October 2023, in accordance with Article 8(8) of the Gas Regulation<sup>5</sup>. The results of this Report will be published in the ENTSG Annual Report 2023.

3 In case Balancing Platforms (BPs) are implemented, Article 47(3) allows the TSOs to continue the operation of the BPs, following the approval by the NRA, for another period of no more than five years.

4 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.

5 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).



Picture courtesy of SNAM

# IMPLEMENTATION MONITORING OF THE BAL NC

## 1 TSO PARTICIPATION AND DATA COLLECTION

This is the sixth time ENTSOG monitors the implementation of the BAL NC across the EU.

The first BAL NC Implementation Monitoring Report was published in 2016 and covered the implementation of the BAL NC after its entrance into force on 1 October 2015. The second report was published in 2017 and aimed at monitoring the status of BAL NC implementation in the EU by 1 October 2016. The third Monitoring Report was published in 2017 and covered the status of its implementation by 1 October 2017. The fourth one was published in 2020 and assessed the implementation of the BAL NC by 1 October 2019 and the fifth was published in 2022 covering the status implementation by 1 October 2021<sup>6</sup>.

This Implementation Monitoring report covers the status of the BAL NC implementation at 1 October 2023 and the changes in the balancing regime implemented among EU TSOs<sup>7</sup> during gas years 2021/2022 and 2022/2023 and covers 26 balancing zones in 25 countries<sup>8</sup> (AT, BE, BG, CZ, DE, DK, EE, ES, FI, FR, GR, HU, HR, IE, IT, LU<sup>9</sup>, LT, LV, NL, PL, PT, RO, SE, SI and SK)<sup>10</sup>.

The BAL NC may also apply to interconnectors. For completeness of the monitoring activity, four interconnectors have been contacted: BBL Company (BBL), Interconnector (former IUK), Trans Adriatic Pipeline (TAP) and Interconnector Greece-Bulgaria (ICGB).

Due to the specific nature of interconnectors, **Interconnector** and **BBL** have implemented the network code according to an “in = out” principle, whereby a network user’s nomination input must equal its off-take nomination. As such, network users cannot be exposed to an imbalance and there is no need to take balancing actions.

Therefore, many of the requirements of BAL NC do not apply. Where BAL NC does apply, e. g. relevant rules on (re-)nominations and information provisions, Interconnector and BBL have taken all reasonable steps to ensure compliance with the BAL NC requirements. This approach was approved by the relevant NRAs.

<sup>6</sup> ENTSOG BAL NC Implementation and Effect Monitoring Report **2015, 2016, 2017, 2019** and **2022**.

<sup>7</sup> Cyprus does not have a TSO, therefore it was not contacted to take part in this monitoring report. Malta still holds a derogation according Article 49(6) of the Gas Directive and the future network of the (prospective) TSO Interconnect Malta is not yet commissioned. It is therefore not included in this report.

<sup>8</sup> The term “country” refers to member states of the EU. As of this report, UK TSOs have been excluded from the monitoring activities due to Brexit.

<sup>9</sup> The data for Luxembourg are part of the questionnaire submitted by the Belgian TSO (Fluxys) as Belgium and Luxembourg have the same balancing regime and together form one balancing zone.

<sup>10</sup> Be referred to Annex 1 for an explanation of the abbreviations used here.

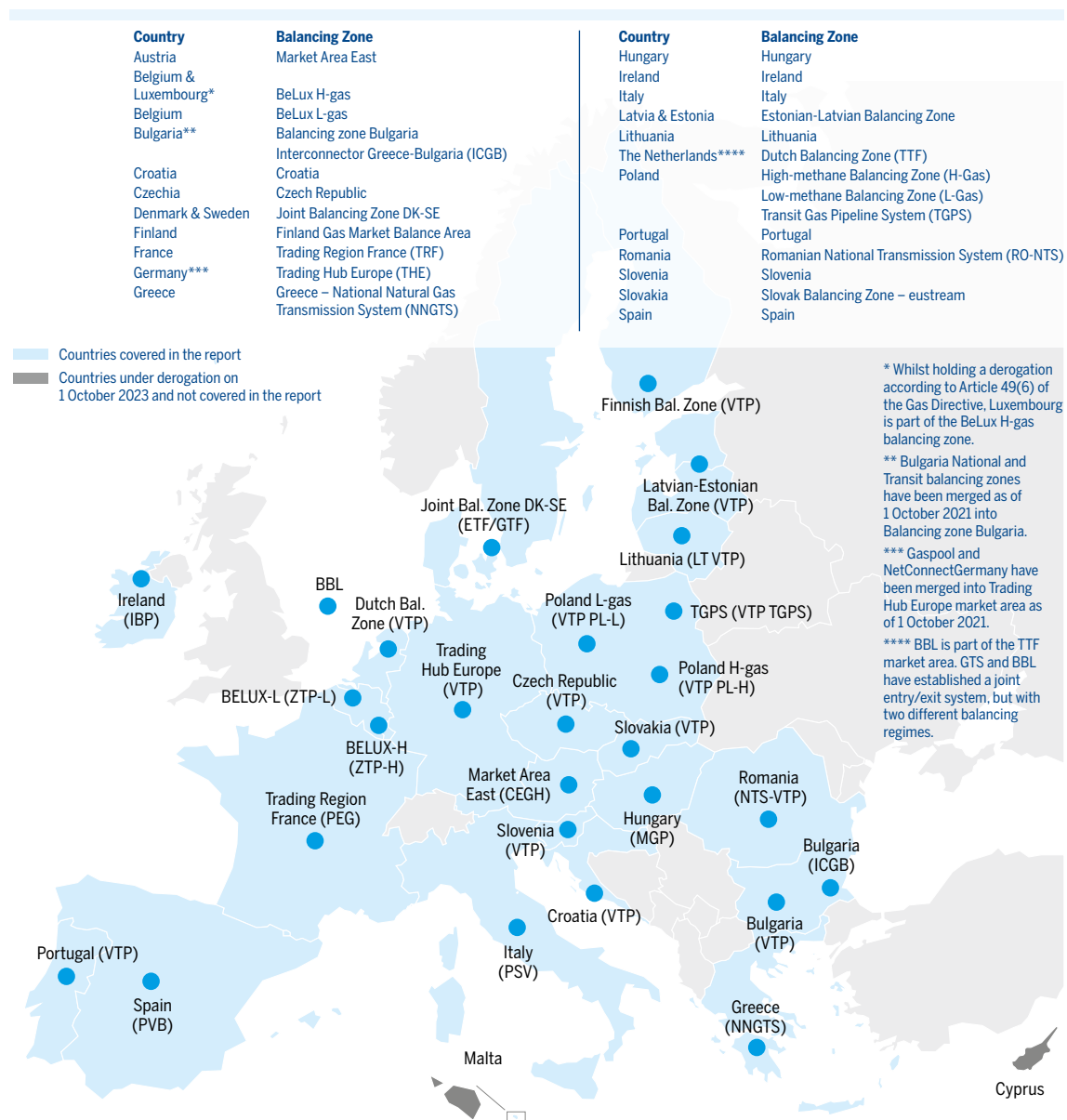
The European Commission granted **TAP** an exemption from the requirements on third-party access, tariff regulation and ownership unbundling set out in Articles 9, 32, 41(6), 41(8) and 41(10) of the Gas Directive, under the terms of the Final Joint Opinion (FJO) of the Energy Regulators of Italy, Greece and Albania dated 6 June 2013. According to paragraph 4.7 of TAP's FJO, TAP's Network Code, which comprises TAP's operational rules, including its balancing model, was approved by the Italian, Greek and Albanian National Regulatory Authorities in June 2020.

During the period covered by this report, **ICGB** came into operation. ICGB entered commercial operation on 1 October 2022. The current balancing

regime of ICGB has not undergone any changes after the start of commercial operation and it is compliant with NC BAL<sup>11</sup>.

In order to produce this report, TSOs were requested to complete a questionnaire covering mandatory requirements provided by each Article of the BAL NC. A full list of the member states, balancing zones and TSOs participating in this monitoring exercise is shown in Annex I, while a detailed description of the BAL NC implementation for each balancing zone has been included in Annex II.

The map below shows the existing balancing zones in EU at the reference date of this report.



**Map 1:** Overview of Balancing Zones and respective VTPs in EU on 1 October 2023

<sup>11</sup> ICGB's current balancing provisions are laid down in section 16 of ICGB's Network Code, which can be entered following this [link](#).

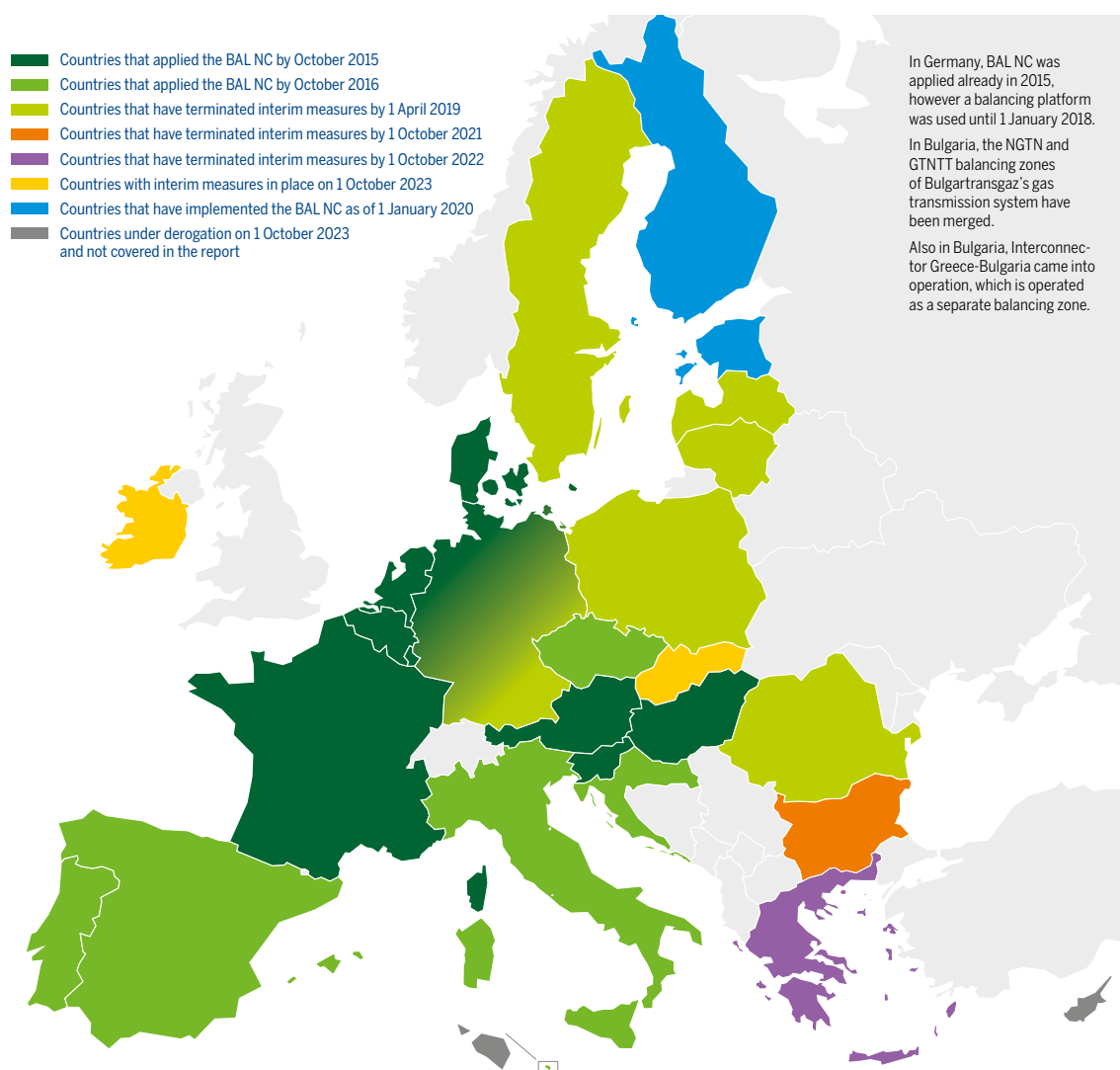


## 2 EVALUATION OF RESPONSES TO THE QUESTIONNAIRE

For eight countries (AT<sup>12</sup>, BE<sup>13</sup>, DE<sup>14</sup>, DK, FR, HU, NL and SI) the BAL NC was applicable as from 1 October 2015 and for five countries (CZ, ES, IT, HR, PT) from 1 October 2016, as approved by the relevant National Regulatory Authority (NRA). The remaining countries (BG, GR, IE, LT, LV, PL, RO, SE and SK) had applied for interim measures.

Five countries (LT, LV, PL, RO, and SE) completely terminated the use of interim measures by April 2019. BG terminated the use of tolerances in July 2019, while interim imbalance charges and balancing services procured as alternative to a balancing

platform were removed when the trading platform became operational, as of 1 January 2020. On 1 October 2021, three countries (GR, IE and SK) were still applying interim measures.



Map 2: Implementation status of the BAL NC in EU MSs on 1 October 2023

<sup>12</sup> The redesign of the national balancing framework in Austria became effective as of 1 October 2022, so in the middle of the reporting period. So, one reporting year covers the old system (2021/22) and one reporting year covers the new system (2022/23).

<sup>13</sup> Belgium and Luxembourg merged the Luxembourg and Belgian gas markets in one cross-border integrated gas market, the BeLux area.

<sup>14</sup> In Germany, until 1 January 2018 a balancing platform was used as an interim measure.



With effect from March 2022, a trading platform was established and operated in GR, allowing the functioning balancing platform and interim imbalance charges to be terminated. The interim measures that remain in place in IE (tolerances) and SK (balancing platform) are planned to be removed

once a functioning trading platform is established and/or market liquidity is developed.

Map 2 shows the implementation status of the BAL NC on 1 October 2023 for each balancing zone reported.



Picture courtesy of DESFA

## 2.1 MAIN UPDATES COMPARED TO PREVIOUS REPORT

Some TSOs have reported updates to the balancing regime that have been implemented before 1 October 2023 and/or have indicated future updates to be implemented after 1 October 2023.

- ▲ In **Austria**, the redesigned balancing system came into force on 1 October 2022. This redesign contains especially changes to an integrated daily balancing regime for transmission and distribution, implementation of daily imbalance prices, revision of WDOs and the implementation of neutrality charges.
- ▲ As mentioned, in **Bulgaria** ICGB became commercially operational on 1 October 2022. ICGB operates the interconnector pipeline between Komotini in Greece and Stara Zagora in Bulgaria and connects Greece and the Trans-Adriatic Pipeline (TAP) with the Bulgarian trans-

mission network, as an integral part of the development of the Southern Gas Corridor<sup>15</sup>. As of 1 October 2021, the National Balancing Zone (BG-N) and Transit Balancing Zone (BG-T) of Bulgartransgaz's gas transmission system have been merged into one balancing zone.

- ▲ In **Denmark**, transit flows have increased substantially with the commencement of the Baltic Pipe as of 1 October 2022, which could challenge intra-day system integrity. Therefore, Energinet has implemented within-day obligations with hourly obligations throughout the gas day to mitigate such a challenge.

<sup>15</sup> More information can be found on [ICGB's website](#).

- ▲ Significant changes in flow dynamics in **Finland** and the stoppage of flows from Imatra entry point have created the need to update the operational balancing activities and assess the functioning of the commercial balancing model within the scope of BAL NC. This is scheduled for after 1 October 2023.
- ▲ In **Germany**, new products have been introduced due to the market merger on 1 October 2021 and with regard to the introduction of the VIPs to Belgium and the Netherlands on 1 April 2022. These products apply existing logic to the enlarged market area.
- ▲ In **Greece**, the Natural Gas Trading Platform<sup>16</sup> was established and operated since 21 March 2022. From that day, all IMs were terminated immediately, meaning the Balancing Platform ceased operation, and marginal prices were calculated from that gas day as per BAL NC provisions as the maximum/minimum between  $[WAP \pm SA \text{ (with a SA equal to 10 \%)}]$  and the highest/lowest price of DESFA's buy/sell transactions on the TP. A new IT system will operate within the first months of 2024, which will produce forecasts for Exit Points serving NDM end-customers. This will fulfil DESFA's obligations as an appointed Forecasting Party.
- ▲ In **Hungary**, FGSZ Zrt. has activated the Line-pack Flexibility Service from 1 December 2022 and introduced WDOs. The introduction of WDO was intended to improve the balance of the gas day portfolio of system users.
- ▲ In **Ireland**, the TSO retains a tolerance for RNG Entry Points as a support to what is a nascent industry. There is only one RNG entry point at present and it comprises of a miniscule part of the overall network flow. It remains under review by the NRA with the intention that it will be removed when the Biomethane sector achieves critical mass.
- ▲ In **Lithuania**, the Neutrality Charge was introduced as a separate charge to network users.
- ▲ In the **Netherlands**, the NRA's decision on undesirable balancing behaviour gives concrete guidance on how to minimise the need for TSOs to take balancing actions. The decree defines what constitutes (substantial) undesirable balancing behaviour and the consequences associated with it. A network user will have to pay a financial charge in case of undesirable balancing behaviour and in case of substantially undesirable balancing behaviour, his licence can be revoked.
- ▲ **Slovakia** is assessing the introduction of a trading platform in the near future. This would eliminate the need to maintain a balancing platform as an interim measure.
- ▲ **Slovenia** applied a few changes to the daily imbalance charge calculation methodology.

## 2.2 MERGER OF BALANCING ZONES

The following balancing zone mergers connected with this Implementation Monitoring Report have been accomplished and possible future balancing zone mergers are in progress:

- ▲ **Bulgaria**: As of 1 October 2021, the National Balancing Zone (BG-N) and Transit Balancing Zone (BG-T) of Bulgartransgaz's gas transmission system have been merged.
- ▲ **Germany**: The merger of the two German market areas Gaspool (DE-GP) and NetConnectGermany (DE-NCG) has come into effect as of 1 October 2021. The new single German Balancing Zone is called Trading Hub Europe (DE-THE) and covers all of Germany.
- ▲ **Lithuania**: At the moment there is no decision on joining the common LVEE balancing zone and the creation of a common tariff zone is postponed

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<sup>16</sup> Follow [this link](#) for more information.





## 2.3 OVERVIEW OF IMPLEMENTATION STATUS OF THE BAL NC PROVISIONS

This paragraph provides a brief overview of the status of implementation of the elements as mentioned in BAL NC in the EU balancing zones. Full

information on the application of the instruments and features in the respective balancing zones can be found in Annex II.

### 2.3.1 TRADE NOTIFICATIONS, TRADING PLATFORMS, SHORT TERM STANDARDISED PRODUCTS ( STSPS)

Trading platforms have been established in all balancing zones, with the exception of SK.

### 2.3.2 BALANCING SERVICES

In the period before 1 October 2023, balancing services have been procured by TSOs in six balancing zones (DE-THE, FI, GR, LVEE, PL-H and SI) in situations where STSPs are not providing the necessary

response to keep transmission network within its operational limits, in absence of a liquid trading platform or to respond to specific system needs.

### 2.3.3 INCENTIVES

On 1 October 2023, incentives are in place in two countries (ES and IT). In both countries the incentive applies to incentivise the TSO/MAM to undertake balancing actions efficiently, according to Article 11(1) of the BAL NC.

### 2.3.4 NOMINATIONS

Nomination and renomination rules have been fully implemented by all TSOs. The Austrian TSOs made some small changes to the timelines for (re)nominations to enable the balancing process quicker.

TSOs operating in two balancing zones have reported some updates in relation to the application of nomination and renomination rules at points other than IPs:

- ▲ In AT at entry from/exit to storage and production points and
- ▲ In BG (ICGB) at Kardjaly exit point.

### 2.3.5 DAILY IMBALANCE CHARGES

Daily imbalance charges, according to Art. 19–23 of the BAL NC, have been implemented by TSOs in all countries. Five balancing zones reported updates to the methodology: AT, DK, GR, HU and SI.

### 2.3.6 WITHIN DAY OBLIGATIONS

In the current reporting period (from 1 October 2021 onwards), Denmark and Hungary have started to apply within day obligations (WDOs). Therefore, on 1 October 2023, WDOs were applied in six balancing zones: AT, BE/LU, DE, DK, HU and NL.

### 2.3.7 NEUTRALITY ARRANGEMENTS

In all balancing zones neutrality provisions have been implemented by 1 October 2023. AT, LVEE, LT and RO have made some changes to the implementation of neutrality arrangements. Also all countries have established financial security measures to prevent losses due to default payment by network users, except for GR.

TSOs from five countries (ES, FR, IT, PL and RO) have reported that cases of **default payment** by

NUs occurred within GYs 2021/22 and 2022/23. In all cases, the credit risk measures implemented have been activated. In RO, there have been cases where network users have not fulfilled their payment obligation. The guarantee for the balancing contract is stipulated in the regulations approved by the NRA and amended with effect from January 2022. In all cases, steps have been taken for recovery through the Court of Law.

### 2.3.8 INFORMATION PROVISIONS

By 1 October 2023, all countries had implemented the information provisions of BAL NC, except GR, where the required IT system for providing forecasts of non-daily metered flows is currently under development (estimated go-live in early 2024).

Further details on the publication of relevant information according to Chapter VIII of BAL NC for each balancing zone can be found in Annex II and Annex III.

### 2.3.9 LINEPACK FLEXIBILITY SERVICE

Compared to the previous Implementation Monitoring Report, the number of countries where a linepack flexibility service (LFS) was offered has

increased by one. By 1 October 2023 an LFS is implemented in CZ, FR, HU, NL and PT. HU started offering an LFS as from 1 December 2022.

### 2.3.10 INTERIM MEASURES

As per the provisions of Article 45(4), interim measures in force on the date of entry into force of the BAL NC should have ended by April 2019. However, where a balancing platform is established due to lack of liquidity in the market or lack of STSPs, the NRA could decide to continue its operation for a period of up to 5 years.

At the reference date of 1 October 2023, two countries (IE and SK) still have interim measures in place:

- ▲ In SK, there is a balancing platform due to the absence of a trading platform. In the near future, a trading platform is scheduled to be established, which will completely end the interim measures.
- ▲ In IE, the applied tolerances are needed to support the development of renewable gas injection.

Interim measure	Country and Bal. Zone	Reason for applying interim measure	Changes after GYs 2019–2021
Balancing platform	Greece	Absence of trading platform	Terminated following establishment of trading platform in March 2022
	Slovakia	Absence of trading platform	No changes, planned termination in near future
Alternative to balancing platform	Slovakia (balancing services)	Absence of trading platform	No changes
Interim imbalance charge	Greece (price derived from balancing platform trades)	Low liquidity of short-term wholesale gas market	Terminated following establishment of trading platform in March 2022
	Slovakia (price derived from balancing platform trades)	Absence of trading platform	No changes, planned termination in near future
Tolerances	Ireland (25 % for Renewable Natural Gas RNG entry points)	Maintained to support development of renewable gas injection	No changes

**Table 1:** Overview of the evolution of interim measures since the last Implementation Monitoring Report (GYs 2019–21)

Table 2 provides a schematic overview of the implementation of the BAL NC provisions in each balancing zone at the reference date of 1 October 2023.

Bal zone	Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Balancing services (Art. 8)	Incentives (Art. 11)	Nominations (Art. 12–18)	Daily imbalance charges (Art. 19–23)	Within day obligations (Art. 24–28)	Neutrality arrangements (Art. 29–31)	Information provisions (Art. 32–42)	Linepack flexibility service (Art. 43–44)	Interim measures (Art. 45–50)
AT										No
BE-H										No
BE-L										No
BG-BTG										No
BG-ICGB										No
CZ										No
DE-THE										No
DK-SE										No
ES										No
FI										No
FR-TRF										No
GR										No
HR										No
HU										No
IE <sup>17</sup>										Yes
IT										No
LT										No
LVEE										No
NL										No
PL-H										No
PL-L										No
PL-TGPS										No
PT										No
RO										No
SI										No
SK <sup>18</sup>										Yes

Implemented
  In process of implementation on 1 Oct 2023
  Not applicable, as regards scope or implementation not required

**Table 2:** Overview of the BAL NC implementation per balancing zone

<sup>17</sup> Tolerances applied only at RNG entry points (biomethane injection).

<sup>18</sup> Interim measures (balancing platform, balancing services, interim imbalance charge) are still in place.





Picture courtesy of GAZ-SYSTEM

### 3 CONCLUSIONS

On 1 October 2023, almost all countries fully applied the BAL NC provisions.

Since the last **Implementation Monitoring Report**, eight countries (AT, BG, DE, DK, GR, HU, LT and SI) have reported updates to the national balancing rules. Further changes in the national balancing rules have been reported as being under implementation in four countries (FI, GR, NL and SK). Additional changes can be expected in the future to enable the integration of renewable and low-carbon gases.

Compared to the previous Implementation Monitoring Report, GR terminated the use of **interim measures**. Interim measures are still in place in IE and SK. In SK, the main reason to maintain the use of interim measures is because of the absence of sufficient liquidity in the short-term wholesale gas market. In IE existing tolerances continue to be needed to support the development of renewable gas injection. The interim measures that remain in place are planned to be removed as soon as well functioning trading platforms are established and market liquidity is developed.

**Trading platforms** have now been established in almost all balancing zones, with the exception of SK. In GR a trading platform was established in March 2022 and in SK, a balancing platform is still in place.

**Balancing services** have been procured by TSOs in six countries (DE, FI, GR, LV, PL (in H-gas balancing zone) and SI) when STSPs are not providing the necessary response to keep transmission network within its operational limits, in absence of a liquid trading platform or to respond to specific system needs.

**Nomination and renomination** rules have been fully implemented in all balancing zones.

In the period after the previous monitoring report, **within day obligations** have been newly implemented in DK and HU.

In all countries, **neutrality provisions** have been implemented in line with Chapter VII of the BAL NC. On 1 October 2023, in all countries except for GR, financial security measures have been established to prevent losses due to default payment by network users.

TSOs from five countries (ES, FR, IT, PL and RO) have reported that cases of **default payment** by NUs occurred within GYs 2021/22–2022/23.

On 1 October 2023, almost all countries had implemented the **information provisions** according to Chapter VIII of the BAL NC, with the exception of GR, where information provisions for non-daily metered flows are still under implementation.

In conclusion, this Implementation Monitoring Report shows that again more progress has been made towards the full implementation of BAL NC provisions in comparison to the previous monitoring report. However, further improvement is still needed to overcome the market illiquidity in certain gas hubs and to remove the interim measures in place.

Moreover, it is expected that further assessment of the existing balancing rules will be needed in order to enable market integration of low carbon and renewable gases.

## 4 LIST OF ABBREVIATIONS AND COUNTRY CODES USED

ACRONYM	DEFINITION	ACRONYM	DEFINITION
<b>ACER</b>	Agency for the Cooperation of Energy Regulators	<b>LNG</b>	Liquefied Natural Gas
<b>BAL NC</b>	Balancing Network Code	<b>MAM</b>	Market Area Manager
<b>BBL</b>	BBL Company (interconnector NL-UK)	<b>MSs</b>	Member States
<b>CBA</b>	Cost-Benefit Analysis	<b>NRA</b>	National Regulatory Authority
<b>DA</b>	Day-Ahead	<b>NU(s)</b>	Network User(s)
<b>DSO</b>	Distribution System Operator	<b>STSP(s)</b>	Short-Term Standardised Product(s)
<b>EC</b>	European Commission	<b>TAP</b>	Trans Adriatic Pipeline
<b>ENTSOG</b>	European Network of Transmission System Operators for Gas	<b>TP</b>	Trading Platform
<b>EU</b>	European Union	<b>TSO</b>	Transmission System Operator
<b>GY(s)</b>	Gas Year(s)	<b>VTP</b>	Virtual Trading Point
<b>IDM / DM / NDM</b>	Intraday metered / Daily metered / Non-daily metered	<b>WAP</b>	Weighted Average Price
<b>ICGB</b>	Interconnector Greece-Bulgaria	<b>WD</b>	Within-Day
<b>IP</b>	Interconnection Point	<b>WDO(s)</b>	Within Day Obligation(s)
<b>LFS</b>	Linepack Flexibility Service		

### COUNTRY CODE

<b>AT</b>	Austria	<b>IE</b>	Ireland
<b>BE</b>	Belgium	<b>IT</b>	Italy
<b>BG</b>	Bulgaria	<b>LT</b>	Lithuania
<b>CZ</b>	Czechia	<b>LU</b>	Luxembourg
<b>DE</b>	Germany	<b>LV</b>	Latvia
<b>DK</b>	Denmark	<b>NL</b>	The Netherlands
<b>EE</b>	Estonia	<b>PL</b>	Poland
<b>ES</b>	Spain	<b>PT</b>	Portugal
<b>FI</b>	Finland	<b>RO</b>	Romania
<b>FR</b>	France	<b>SE</b>	Sweden
<b>GR</b>	Greece	<b>SI</b>	Slovenia
<b>HR</b>	Croatia	<b>SK</b>	Slovakia
<b>HU</b>	Hungary		

# ANNEX I:

## LIST OF BALANCING ZONES BY 1 OCTOBER 2023

Country	Balancing zone	Acronym	TSO/Market Operators
<b>Countries covered by the report</b>			
Austria	Market Area East	AT	GCA & TAG (TSOs), AGGM (MAM)
Belgium & Luxembourg	BeLux H-gas	BE-H	Fluxys (TSO)
Belgium	BeLux L-gas	BE-L	
Bulgaria	Balancing zone Bulgaria	BG-BGT	Bulgartransgaz (TSO)
	ICGB Balancing Zone	BG-ICGB	ICGB (TSO)
Croatia	Croatia	HR	Plinacro (TSO) <sup>1</sup>
Czechia	Czech Republic	CZ	NET4GAS (TSO) <sup>2</sup>
Denmark & Sweden	Joint balancing zone Denmark and Sweden	DK-SE	Energinet & Nordion (TSOs) <sup>3</sup>
Finland	Finland Gas Market Balance Area	FI	Gasgrid (TSO)
France	Trading Region France (TRF)	FR-TRF	GRTgaz & Teréga (TSOs)
Germany	Trading Hub Europe	DE-THE	Trading Hub Europe GmbH (MAM)
Greece	Greece / National Natural Gas Transmission System (NNGTS)	GR	DESFA (TSO)
Hungary	HU	HU	FGSZ (TSO)
Ireland	Ireland	IE	Gas Networks Ireland (TSO/DSO)
Italy	Italy	IT	SNAM (TSO)
Latvia & Estonia	Estonian-Latvian Balancing zone	LVEE	Conexus Baltic Grid System Control Centre (TSO-Market Operator) & Elering (TSO)
Lithuania	Lithuania	LT	Ambergrid (TSO)
The Netherlands	TTF	NL	GTS & BBL (TSOs)
Poland	High-methane gas Balancing Zone (H-Gas)	PL-H	GAZ-SYSTEM (TSO)
	Low-methane Balancing Zone (L-Gas)	PL-L	
	Transit Gas Pipeline System (TGPS)	PL-TGPS	
Portugal	Portugal (PT)	PT	REN (TSO)
Romania	Romanian National Transmission System Balancing Zone (RO-NTS)	RO	SNTGN Transgaz (TSO)
Slovenia	Slovenia	SI	Plinovodi (TSO)
Slovakia	Slovak balancing zone – eustream	SK	Eustream (TSO)
Spain	Spain	ES	Enagas Technical System Manager
<b>Countries under derogation (excluded from report)</b>			
Cyprus	n/a	CY	
Malta	n/a	MT	

1 Plinacro provided data in coordination with HROTE – Croatian Market Operator.

2 Net4Gas provided data in coordination with OTE – Czech Market Operator.

3 Energinet provided the data for the JBZ-DK-SE, also on behalf of the Swedish TSO Nordion Energi.

# ANNEX II:

## FACT SHEET ON BAL NC IMPLEMENTATION FOR EACH BALANCING ZONE

### 1 AUSTRIA

Key features	
Name of balancing zone(s)	Market Area East <sup>4</sup>
Distribution system part of balancing zone	Yes
Hub name (trading platform)	EEX CEGH (Central European Gas Hub) Gas Exchange
VTP name	CEGH VTP
Implementation date of BAL NC	October 2015
Balancing responsible (Art. 4.4)	The Market Area Manager in the Market Area East is AGGM Austrian Gas Grid Management AG, the Clearing Entity is AGCS Austrian Gas Clearing and Settlement AG.
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8 of BAL NC) (Art. 8)	No
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	Implemented (portfolio balancing)  Within-day obligations only apply on days during which the Market and Distribution Area Manager had to purchase both positive and negative balancing energy for Balance Groups, which are imbalanced and which are beyond the tolerances <sup>5</sup> .
Incentives (Art. 11)	No incentives according to Art 11 BAL NC.
Daily imbalance charges (Art. 19–23)	Implemented  The methodology is defined in the sections 21 to 29 and 40 in the respective <b>ordinance</b> .
Neutrality Arrangements (Art. 29–31)	Implemented  The Clearing Entity in the Market Area East is "AGCS Austrian Gas Clearing and Settlement AG" and publishes the neutrality charge account under <a href="#">Link</a> .
Interim measures (Art. 45–50)	No
Information provision (Art. 32–42)	Publication of balancing actions (Art. 9.4, Art. 32.2 and Art. 33.1(g)):  The MAM publishes a yearly <b>Balancing report on their website</b> .  Publication of aggregate neutrality charges and balancing charges (Art. 29.4): <a href="https://www.agcs.at/agcs/daten-und-preise/2023_Umlagekonto.pdf">https://www.agcs.at/agcs/daten-und-preise/2023_Umlagekonto.pdf</a> <a href="https://www.agcs.at/de/daten_preise/marktgebietsstatistik">https://www.agcs.at/de/daten_preise/marktgebietsstatistik</a>  Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3).

### MAIN UPDATES IMPLEMENTED IN GY 2021/22 – GY 2022/23

The Balancing regime was changed on 1.10.2022. From that date onwards, adaptations refer especially to calculation of imbalance charges, tolerances, WDOs, neutrality charges and simplification of administrative rules.

<sup>4</sup> In Austria, there are three market areas (Market Area East, Tyrol and Vorarlberg). However, the market areas Tyrol and Vorarlberg have no transmission network operators, and TSOs with an entry-exit system are only available in Market Area East.

<sup>5</sup> More detailed information can be found in § 23 of the **Austrian Gas Market Model Ordinance**.

## 2 BELGIUM & LUXEMBOURG

Key features	
Name of balancing zone(s)	BeLux-H and BeLux-L <sup>6</sup>
Distribution system part of balancing zone	Yes
Hub name (trading platform)	EEX
VTP name	ZTP; ZTP-L
Implementation date of BAL NC	October 2015
Balancing responsible (Art. 4.4 of BAL NC)	Balansys, responsible the commercial balancing (financial settlements).
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Fully implemented
Balancing services (Art. 8)	No
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	<p>Yes (System wide according to Art. 25(1) of BAL NC)</p> <p>During the gas day, as long as the market balancing position (aggregate of all the grid users' positions) remains within the predefined upper and lower market thresholds (within day obligation), there is no intervention by the balancing operator. All grid users receive on hourly basis information on the market balancing position and on their own balancing position together with forecasting data for the remaining hours of the day. In case the market balancing position goes beyond the upper (or lower) market threshold, the balancing operator instantly settles proportionally in respect of the grid user balancing position. The balancing operator initiates a sale (or purchase) transaction on the commodity market for the quantity of the market excess (or shortfall) and settles in cash that quantity with the grid user(s) contributing to such imbalance in proportion of their individual contribution. This transaction, once concluded, will set the reference price used at that time for refunding or charging network users who caused the market excess or shortfall hence reflecting the market value for that residual natural gas at that time.</p> <p>All grid users and the market position is settled to 0 at the end of each gas day.</p> <p>During the gas day, as long as the market balancing position (aggregate of all the grid users' positions) remains within the predefined upper and lower market thresholds (within day obligation), there is no intervention by the balancing operator. All grid users receive on hourly basis information on the market balancing position and on their own balancing position together with forecasting data for the remaining hours of the day. In case the market balancing position goes beyond the upper (or lower) market threshold, the balancing operator instantly settles proportionally in respect of the grid user balancing position.</p>
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Implemented <sup>7</sup>
Neutrality Arrangements (Art. 29–31)	<p>Implemented</p> <p>All costs and revenues arising from daily and within-day imbalances positions and operational costs linked to the balancing activities of Balansys are passed on to network users. Given the fact that the flexibility made available to the market is mainly used by network users supplying domestic outputs (consumption within the BeLux zones), the neutrality charge is invoiced/credited on the basis of the provisional energy allocations to the level of domestic exits without distinction between the different types of consumers.</p> <p>Bank guarantee is applied as measure to mitigate possible default in payment by network users. In case of a default attributable to a network user, the exposure of a network user must be covered by a creditworthiness (bank guarantee or cash deposit) and have no possibility to trade anymore if his guarantee exceeds his exposure, to avoid payment default.</p>
Interim measures (Art. 45–50)	No
Information provision (Art. 32–42)	<p><b>Publication of balancing actions</b> (Art. 9.4, Art. 32.2 and Art. 33.1(g)).</p> <p><b>Publication of aggregate neutrality charges and balancing charges</b> (Art. 29.4).</p> <p><b>Report on the accuracy of the forecast of a network user's NDM off-takes</b> (Art. 42.3)</p>

### MAIN UPDATES IMPLEMENTED IN GY 2021/22 – GY 2022/23

<sup>6</sup> BeLux-L zone applies only in Belgium

<sup>7</sup> [Link](#) to daily imbalance charge calculation methodology



### 3 BULGARIA

Key features	
Name of balancing zone(s)	National Balancing Zone ICGB Balancing Zone
Distribution system part of balancing zone	No
Hub name (trading platform)	Balkan Gas Hub (BGH) / Trayport Joule
VTP name	VTP Bulgaria VTP ICGB
Implementation date of BAL NC	Interim measures terminated (tolerances removed in 2019, interim imbalance charge in 2020). ICGB operates under the provisions of the BAL NC since the start of its commercial operation date which is October 1 <sup>st</sup> 2022.
Balancing responsible (Art. 4.4)	TSO – Bulgartransgaz TSO – ICGB
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented as of 1 January 2020
Balancing services (Art. 8)	No
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	No
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Implemented <sup>8,9</sup>  For Bulgartransgaz, a public consultation was held on August 2023 to set parameters valid for GY 2023/24 used for the daily Imbalance and neutrality charge calculation methodology (Balancing Methodology) for GY 2023/24. The changes proposed regard a keeping the small adjustment applied to determine the applicable prices (value amounts to 8 %), clearing period for the neutrality account for balancing (keeping 6 months). The criteria's according Art. 25 of the Balancing Methodology are set to: Number of completed transactions – more than 2 (two) commercial transactions; Minimum total volume of executed transactions – 1,000 MWh for the reporting day. Bulgartransgaz informed that no opinions or comments were received from interested parties. The new parameter are applicable as of 1 October 2023. <sup>10</sup>  For ICGB, via a joint decision of the Energy Regulators of Greece and Bulgaria, the updated daily imbalance charge calculation methodology was approved 2022. The decision approved the small adjustment applied to determine the applicable prices (value amounts to 20 %). The Regulators determined that the daily imbalance charge calculation methodology is compliant with the neutrality account and balancing obligations set forth in EU Regulation No 312/2014.
Neutrality Arrangements (Art. 29–31)	Implemented  Any costs and revenues arising from the following activity is passed on to network users:  <ul style="list-style-type: none"> <li>▲ revenues generated by the balancing activity, including revenues from the sale of natural gas surpluses, resulting from carrying out the activity over the period of consideration of clearing the neutrality account;</li> <li>▲ costs for carrying out the balancing activity carried out over the period of consideration of clearing the neutrality account, including: <ul style="list-style-type: none"> <li>– costs for purchasing natural gas for physical balancing;</li> <li>– costs for purchasing natural gas for commercial balancing;</li> <li>– operational costs for carrying out the activity;</li> <li>– yearly depreciations of assets, with which the balancing activity is performed.</li> </ul> </li> </ul> A system of financial security safeguards has been established as measure to prevent risk of default payment of balancing charges from network users. In case the users and/or natural gas traders fail to meet their obligations to manage their credit risk, the operator has the right to limit or terminate the provision of natural gas access and transport service to limit the financial losses generated by the balancing.
Interim measures (Art. 45–50)	Terminated <sup>11</sup>

8 [Link](#) to the approved daily imbalance charge calculation methodology of ICGB (Art. 20.2).

9 [Link](#) to the approved daily imbalance charge calculation methodology of Bulgartransgaz (Art. 20.2).

10 [Link](#) to public consultation.

11 Tolerances removed in July 2019, interim imbalance charge and balancing service agreements removed once trading platform became operational as of 1 January 2020.

Key features	
Information provision (Art. 32–42)	<p>Bulgartransgaz:</p> <p><b>Publication of balancing actions</b> (Art. 9.4, Art. 32.2 and Art. 33.1(g)).</p> <p>Publication of <b>aggregate neutrality charges</b> and <b>balancing charges</b> (Art. 29.4).</p> <p>Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3): Not available</p> <p>ICGB:</p> <p><b>Publication of balancing actions</b> (Art. 9.4, Art. 32.2 and Art. 33.1(g)).</p>

## MAIN UPDATES IMPLEMENTED IN GY 2021/22 – GY 2022/23



Picture courtesy of FGSZ

## 4 CROATIA

Key features	
Name of balancing zone(s)	Croatia
Distribution system part of balancing zone	No
Hub name (trading platform)	HROTE Gas Trading Platform
VTP name	VTP
Implementation date of BAL NC	October 2015
Balancing responsible (Art. 4.4)	TSO – Plinacro HROTE – Market operator (HROTE is operating virtual trading point and gas trading platform. HROTE is also responsible for all financial settlement related to balancing action and for neutrality accounting)
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	No
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	No
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Implemented The daily imbalance quantity is determined by the difference between the amount of gas delivered to the transport system and the determined quantities of gas taken from the transmission system at the level of the gas day for each balance group, taking into account the accepted transactions at the virtual trading point, closed trading on trading platforms and activated balancing energy for the balancing service. Based on decision from the NRA, the price of locational products should be taken into account for the purpose of determining the marginal buy/sell price and the WAP. <sup>12</sup>
Neutrality Arrangements (Art. 29–31)	Implemented Cost and Revenues to be passed on to network users (balance group responsible): The sum of all cash amounts deriving from the settlements of daily imbalance charges for the balance group, charges for trading on the trading platform with respect to the balancing actions of the transmission system operator and charges for activated balancing energy through the use of balancing services. <sup>13</sup> In order to mitigate their default in payment of balancing charges by network users, bank guarantee and cash deposit are required. These are retained in case of default attributable to a network user.
Interim measures (Art. 45–50)	No
Information provision (Art. 32–42)	<b>Publication of balancing actions</b> (Art. 9.4, Art. 32.2 and Art. 33.1(g)). <b>Publication of aggregate neutrality charges and balancing charges</b> (Art. 29.4). Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3): Not available

### MAIN UPDATES IMPLEMENTED IN GY 2021/22 – GY 2022/23

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<sup>12</sup> [Link](#) to the approved daily imbalance charge calculation methodology (Art.20.2).

<sup>13</sup> [Link](#) to the NRA approved and published methodology for the calculation of the neutrality charges (Art. 30.2). (Croatian only)

## 5 CZECHIA

Key features	
Name of balancing zone(s)	Czech Republic
Distribution system part of balancing zone	Yes
Hub name (trading platform)	OTE
VTP name	CZVTP
Implementation date of BAL NC	October 2016
Balancing responsible (Art. 4.4)	TSO – Net4Gas OTE as a market operator organises the trading platform (where among other trades balancing actions are performed) and also administers the financial settlement of imbalances.
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	Procured via Public Tender procedure (Art.8.3), used in absence of liquidity of trade in STSPs. The service was procured for the calendar year 2019, however, was not used. <sup>14</sup>
Linepack Flexibility Service (Art. 43–44)	Yes The LFS is used as flexibility tool to allow NUs to balance their position within a predefined flexibility bandwidth. No additional costs of offsetting gas imbalances are incurred unless these limits are exceeded. The LFS is provided free of charge to NUs that have a reserved capacity at IPs or at gas storage points (unless the allocation rule ensuring equality of nomination and allocation is applied at these points for the relevant gas day), and those NUs responsible for imbalances at specific points of delivery. Unused flexibility is traded on the organised market platform, so that NUs are incentivised to participate in the unused flexibility market to prevent financial settlement of the daily imbalance quantities. If the cumulative daily imbalances exceed the flexibility limits, the imbalanced NUs will pay the applicable price for this imbalance exceeding the flexibility limit. <sup>15</sup>
WDOs (Art. 24–28)	No
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Implemented According to article 21.2 of BAL NC, the imbalance quantity calculation takes into account the linepack flexibility service. Daily imbalance quantity is lowered by the individual daily amount of linepack flexibility allocated to a network user. <sup>16</sup>
Neutrality Arrangements (Art. 29–31)	Implemented Balancing actions costs/revenues and daily imbalance charges are passed on to network users. By the end of the year the neutrality account is reset and the final balance is covered by price regulation (transmission tariff). No neutrality charges are involved in the process. OTE publishes information on the neutrality account. In order to mitigate possible default in payment by network users, the market operator (OTE) requires the system users to provide assurance, which is retained in case of default in payment.
Interim measures (Art. 45–50)	No
Information provision (Art. 32–42)	<b>Publication of balancing actions</b> (Art. 9.4, Art. 32.2 and Art. 33.1(g)). <b>Publication of aggregate neutrality charges and balancing charges</b> (Art. 29.4). <b>Report on the accuracy of the forecast of a network user's NDM off-takes</b> (Art. 42.3).

### MAIN UPDATES IMPLEMENTED IN GY 2021/22 – GY 2022/23

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<sup>14</sup> [Link](#) to the published information on balancing services according to Art. 8.7.

<sup>15</sup> [Link](#) to the relevant documents that describe the offered linepack flexibility service.

<sup>16</sup> [Link](#) to the approved daily imbalance charge calculation methodology.

## 6 DENMARK & SWEDEN

Key features	
Name of balancing zone(s)	Joint Balancing Zone – Denmark and Sweden
Distribution system part of balancing zone	No
Hub name (trading platform)	EEX ETF
VTP name	ETF/GTF <sup>17</sup>
Implementation date of BAL NC	Denmark implemented BAL NC in October 2015. Sweden applied interim measures until April 2019. Joint Balancing Zone operational since April 2019.
Balancing responsible (Art. 4.4)	TSO – Energinet
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	No
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	Yes
Incentives (Art. 11)	Yes
Daily imbalance charges (Art. 19–23)	Implemented The daily imbalance charge methodology including within-day-obligations has been implemented in accordance with the BAL NC. A daily imbalance quantity is calculated for each network user (NU) for each gas day as result of deliveries – offtakes. To calculate daily imbalance charges for each NU, the NU's Daily Imbalance Quantity shall be multiplied by the applicable price, which is determined depending on whether the estimated imbalance and the calculated imbalance falls within the green zone (linepack calculated area of equilibrium) or yellow zone (linepack area outside the green zone), and if the BAM has performed any balancing actions (yellow zone trades). <sup>18</sup>
Neutrality Arrangements (Art. 29–31)	Partially implemented Costs and revenues arising from daily imbalance charges and from balancing actions are passed on to network users through the transmission tariffs, which is based on the network users' actual use of the system. <sup>19</sup> There is no separate balancing neutrality charge.  A general credit line has been implemented as measure to mitigate possible default in payment by network users. In the event of late payment of imbalance charges, Energinet is entitled to charge reminder fees and default interest. The default interest shall be calculated from and including the due date to and including the day on which payment is received, at an annual interest rate corresponding to the discount rate of Danmarks Nationalbank at any given time with an addition of 5 percentage points. Such reminder fees and default interest shall be invoiced separately and as soon as possible.
Interim measures (Art. 45–50)	No
Information provision (Art. 32–42)	Publication of balancing actions (Art. 9.4, Art. 32.2 and Art. 33.1(g)): <b>ENERGI DATA SERVICE</b> <b>Publication of aggregate neutrality charges and balancing charges</b> (Art. 29.4). <b>Report on the accuracy of the forecast of a network user's NDM off-takes</b> (Art. 42.3).

### MAIN UPDATES IMPLEMENTED IN GY 2021/22 – GY 2022/23

Energinet has implemented a new **Submission of Methodology Approval of Adjusted Commercial Balance Model**.

<sup>17</sup> ETF: trading point for Danish gas exchange, GTF: trading point for bilateral trades on secondary market.

<sup>18</sup> [Link](#) to the approved daily imbalance charge calculation methodology (Art. 20.2).

<sup>19</sup> [Link](#) to the NRA approved and published methodology for the calculation of the neutrality charges (Art. 30.2).



## 7 FINLAND

Key features	
Name of balancing zone(s)	Finland Gas Market Balance Area
Distribution system part of balancing zone	Yes
Hub name (trading platform)	GET Baltic
VTP name	VTP
Implementation date of BAL NC	1 January 2020
Balancing responsible (Art. 4.4)	TSO – Gasgrid
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	Yes
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	No
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Implemented <sup>20</sup> The daily imbalance charges are calculated for each balance group by multiplying the balance group's daily imbalance quantity by the applicable imbalance charge price. The daily imbalance quantity is based on the results of the final balance settlement. If the TSO has not traded on the gas exchange or placed within-day orders on balancing service agreements during the gas delivery date, the price of the daily imbalance charge fee for the balance group shall be the adjusted neutral gas price. If there are no any trades concluded at the gas exchange, the price defined in the balancing service agreement (concluded through public tender process) would be used.
Neutrality Arrangements (Art. 29–31)	Implemented <sup>21</sup> The following costs and revenues are passed on to network users: <ul style="list-style-type: none"> <li>▲ paid and credited Imbalance Charges;</li> <li>▲ costs and revenues relating to balancing actions undertaken;</li> <li>▲ costs relating to balancing service agreements in force at that time;</li> <li>▲ development, investment and maintenance costs relating to balancing actions;</li> <li>▲ personnel costs relating to balancing actions; and</li> <li>▲ finance costs relating to balancing actions.</li> </ul> <p>The balance responsible party's monthly neutrality charge shall be determined by multiplying the amount of aggregate offtakes included during the gas month in the balance responsible party's balancing portfolio (incl. Exit Zone, Virtual Trading Point and Balticconnector) by the price of the neutrality charge applicable to that gas month.</p> <p>Creditworthiness requirements have been established to secure payment of imbalance charges.</p>
Interim measures (Art. 45–50)	No
Information provision (Art. 32–42)	Publication of balancing actions (Art. 9.4, Art. 32.2 and Art. 33.1(g) ): Gasgrid will develop further the balancing action publication site in early 2024. <b>Publication of aggregate neutrality charges and balancing charges (Art. 29.4).</b> Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3): Not available.

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<sup>20</sup> [Link](#) to the approved daily imbalance charge calculation methodology (Art.20.2).

<sup>21</sup> [Link](#) to the NRA approved and published methodology for the calculation of the neutrality charges (Art. 30.2).

## 8 FRANCE

Key features	
Name of balancing zone(s)	Trading Region France
Distribution system part of balancing zone	No
Hub name (trading platform)	PEGAS (EEX/Powernext)
VTP name	PEG
Implementation date of BAL NC	GRTgaz and Teréga implemented BAL NC in October 2015. New balancing zone TRF operational since November 2018.
Balancing responsible (Art. 4.4)	TSO – GRTgaz and Teréga
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	No
Linepack Flexibility Service (Art. 43–44)	Yes  <b>GRTgaz</b> (ALIZES service) The service is financially neutral for GRTgaz. It applies for network users who deliver to end customers on a transparent and non-discriminatory basis. It has no impact on cross-border trade. For eligible days of the month M, a residual imbalance is established as the algebraic sum of imbalances related to these days. Network users' residual imbalances are cleared based on the Neutral reference Price (NRP) <sup>22</sup> .  <b>Teréga</b> (SET service) Only available for network users supplying end-consumers consumption points. It incentivises network users to contribute to the balancing of the system and mitigate imbalances due to NDM delivery points. If the linepack is balanced (no intervention of the TSO needed for the gas day) the shipper's imbalance is invoiced with a non-penalised price. Marginal price is applicable when there is a TSO intervention <sup>23</sup> .
WDOs (Art. 24–28)	No
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Implemented <sup>24</sup>
Neutrality Arrangements (Art. 29–31)	Implemented  <b>GRTgaz:</b> Costs and revenues arising from daily imbalance charges and from the balancing actions undertaken are passed on to network users. The neutrality charges are in proportion to the delivered quantities (distribution and industrial sites) of network user's.  In order to mitigate possible default in payment by network users the following measures have been taken: Upgrade of Transmission GTCs regarding the guarantee taking into account imbalances exposure, Anticipated invoices. In case of a default attributable to a network user, the bank guarantee is cashed.  <b>Teréga:</b> Costs and revenues arising from daily imbalance charges and within day charges and from the balancing actions undertaken are passed on to network users.  The result of the balancing for month M is distributed among the network users who have a transport contract with TERÉGA in effect during month M in proportion to the Daily Quantities Allocated at the Consumption Delivery Points for the Days between the 1 <sup>st</sup> day of month M and the last day of month M.  In order to mitigate possible default in payment by network users the following measures have been taken: balancing liability indicator and financial guarantees with flash invoice in case of guarantees overrun. In case of a default attributable to a network user, the bank guarantee is cashed. <sup>25</sup>
Interim measures (Art. 45–50)	No

22 More information is available at the [GRTgaz website](#).

23 More information is available at the [Additional services page](#) on the website of Teréga, including "Transport Balancing Service" (TBS or SET in French) and charges described in Appendix A: Scale of charges via "[Contractual Information](#)" page.

24 Link to the approved daily imbalance charge calculation methodology (Art. 20.2): GRTgaz: [Link](#), Teréga: [Link](#)

25 Link to the NRA approved and published methodology for the calculation of the neutrality charges (Art. 30.2):  
– [Deliberation of the French Energy Regulatory Commission of 15 January 2014 approving the balancing rules for the GRTgaz and TIGF transmission networks as from 1 April and 1 October 2015](#)  
– [Deliberation of the Regulatory Commission of Energy of 10<sup>th</sup> September 2015 relating to developments of the balancing rules on gas transport networks on 1<sup>st</sup> October 2015](#)

Key features	
Information provision (Art. 32–42)	<p>Publication of balancing actions (Art. 9.4, Art. 32.2 and Art. 33.1(g)):  <b>GRTgaz</b> (detailed information on balancing actions and prices can be downloaded in .xls for each day)  <b>Teréga</b></p> <p>Publication of aggregate neutrality charges and balancing charges (Art. 29.4):  <b>GRTgaz</b> (Balancing section), <b>Teréga</b></p> <p>Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3):  <b>GRTgaz</b> (monthly indicators section and annual report)</p> <p><b>Teréga:</b></p> <ul style="list-style-type: none"> <li>▲ Global TSO forecasts indicators assessments.</li> <li>▲ KO value and % replacement correspond to the reliability assessment of NDM off-takes forecasts.</li> </ul>

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## 9 GERMANY

Key features	
Name of balancing zone(s)	Trading Hub Europe (Before 1 October 2021: Net Connect Germany and Gaspool)
Distribution system part of balancing zone	Yes
Hub name (trading platform)	EEX (and ICE for trades in adjacent balancing zone)
VTP name	THE-VTP (Until 1 October 2021: GPL-VHP and NCG-VTP)
Implementation date of BAL NC	1 October 2015 <sup>26</sup>
Balancing responsible (Art. 4.4)	Market Area Manager Trading Hub Europe (Until 1 October 2021, two MAMs: Gaspool and Net Connect Germany)
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented  Updates in merit order:  Against the backdrop of the implementation of virtual interconnection points (VIP) as of 1 April 2020, the hourly products switched to being traded for delivery in a specified balancing zone ("zone-specific" product) instead of at specified network points ("point-specific" product). In addition, a new product called "Short-Call Balancing Services" (SCB) was introduced within MOL 4 on 1 May 2020.
Balancing services (Art. 8)	Yes – procured via Public Tender procedure (according to Art. 8.3 of BAL NC)  Balancing services (Long Term Options) are contracted for emergency situations and are only used when no corresponding short term offers are available. Priority is given to STSPs, meaning that available short-term offers are used first regardless of the commodity price. Long Term Options can be used in case of a locational balancing demand if no short-term offers within the respective location are available. STSPs are usually very liquid and available for trade at any time of the day. Long Term Options are tendered and contracted for security of supply reasons.
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	Yes (portfolio based – according to Art. 25.2)  For every hour within the gas day the market area manager shall net the inputs into the balancing group that are relevant for balancing within that hour against the offtakes from the balancing group that are relevant for balancing. The hourly net total shall be cumulated over the gas day. There shall be no separate consideration of inputs or offtakes at individual points.  The following allocation groups shall be distinguished: a) For points that are balanced according to the principle of "allocated as nominated" or "allocated as measured", the allocated quantity is considered for each hour. No tolerances shall be allowed. b) For IDM exit points, either the hourly share of the actual daily offtake quantity distributed evenly (as a flat daily profile) over the entire gas day or the actual offtake quantity for each hour is relevant. The actual offtake quantity is the allocated offtake quantity without calorific value correction but with replacement value correction. A tolerance is allowed for both subgroups: the amount of the tolerance for each hour is +/-7.5 percent of the daily offtake quantity. c) For NDM exit points, the hourly share of the daily quantity of the standard load profile distributed evenly over the entire gas day (as a flat daily profile) is relevant. No tolerances shall be allowed.  If cumulating the hourly net totals results in a surplus or short supply after taking into account any allowable tolerance (within day flexibility quantity), the balancing group manager is obliged to pay the market area manager a flexibility charge in euros per MWh. The following applies to the imposition of the flexibility charge:  The market area manager shall only impose a flexibility charge on those days on which opposing balancing actions (purchasing and selling of balancing gas) via MOL rank 1 have occurred in the market area and resulted in costs incurred for the market area manager. No flexibility charge shall be imposed on gas days on which these criteria are not fulfilled.  The market area manager shall calculate the amount of the flexibility charge for the gas day in question as the quotient of the costs for the flexibility balancing gas weighted by quantity and the quantity of flexibility balancing gas.
Incentives (Art. 11)	An incentive mechanism applies for providing an accurate forecast for each network user's non-daily metered off-takes. <sup>27</sup>
Daily imbalance charges (Art. 19–23)	Implemented  Imbalance charges based on difference between the sum of all entry and the sum of all exit positions per balancing group.

<sup>26</sup> The BAL NC was applicable in Germany already in 2015. However, a balancing platform was used until 1 January 2018.

<sup>27</sup> Find more information [here](#).

Key features																			
Neutrality Arrangements (Art. 29–31)	<p>Implemented</p> <p>The following costs and revenues are passed on to network users:</p> <table border="1"> <thead> <tr> <th>Revenues</th><th>Costs</th></tr> </thead> <tbody> <tr> <td>▲ Revenues from balancing gas</td><td>▲ Expenditures from balancing gas</td></tr> <tr> <td>▲ Revenues from imbalance charges</td><td>▲ Expenditures from imbalance charges</td></tr> <tr> <td>▲ Revenues structuring charge/flexibility charge</td><td>▲ Expenditures for RLM quantity differences</td></tr> <tr> <td>▲ Revenues from balancing neutrality charge</td><td>▲ Expenditures for positive reconciliation quantities</td></tr> <tr> <td>▲ Revenues RLM quantity differences</td><td>▲ Interest charges</td></tr> <tr> <td>▲ Revenues from negative Reconciliation neutrality charge</td><td>▲ Other Costs</td></tr> <tr> <td>▲ Interest earned</td><td></td></tr> <tr> <td>▲ Other revenues</td><td></td></tr> </tbody> </table> <p>Costs and revenues from balancing activities are divided between the two neutrality accounts according to an allocation formula on a daily basis.</p> <p>The allocation formula is calculated as the ratio between shipper imbalances and imbalances in DSO network accounts. Fixed costs of long-term balancing products and capacity costs for balancing activities at the adjacent trading point are not shared according to the daily ratio but according to a standard yearly ratio.</p> <p>The yearly ratio for a gas year will be calculated once all final allocation data for that gas year has been collected.</p> <p>A set of measures have been taken to mitigate possible default in payment cause by network users (e. g. intraday termination of exit-nominations + termination of all BG in case of substantial short positions in one BG and incorrect registration information + right to inform other MAM/TSO in case of fraud).</p> <p>In the case of payment defaults that were caused by a balancing group manager, the default is allocated to all balancing group manager within the framework of the next charging period. The totality of all balancing group managers ultimately bears the burden of payment for payment defaults.</p>	Revenues	Costs	▲ Revenues from balancing gas	▲ Expenditures from balancing gas	▲ Revenues from imbalance charges	▲ Expenditures from imbalance charges	▲ Revenues structuring charge/flexibility charge	▲ Expenditures for RLM quantity differences	▲ Revenues from balancing neutrality charge	▲ Expenditures for positive reconciliation quantities	▲ Revenues RLM quantity differences	▲ Interest charges	▲ Revenues from negative Reconciliation neutrality charge	▲ Other Costs	▲ Interest earned		▲ Other revenues	
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▲ Revenues from negative Reconciliation neutrality charge	▲ Other Costs																		
▲ Interest earned																			
▲ Other revenues																			
Interim measures (Art. 45–50)	No																		
Information provision (Art. 32–42)	<p>Publication of balancing actions (Art. 9.4, Art. 32.2 and Art. 33.1(g)):  <b>Trading Hub Europe &gt; Publications &gt; Balancing gas &gt; External balancing gas</b></p> <p>Publication of aggregate neutrality charges and balancing charges (Art. 29.4):  <b>Trading Hub Europe &gt; Publications &gt; Prices &gt; Fees and neutrality charges</b></p> <p>Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3):  <a href="https://www.bdew.de/media/documents/SLP-Evaluierungsbericht.pdf">https://www.bdew.de/media/documents/SLP-Evaluierungsbericht.pdf</a> (German only)  <a href="https://www.bdew.de/media/documents/2021-03-31_SLP-Evaluierungsbericht.pdf">https://www.bdew.de/media/documents/2021-03-31_SLP-Evaluierungsbericht.pdf</a> (German only)</p> <p>According to Article 39(4) an incentive mechanism can be provided that supports the provision of more precise SLP (NDM) forecasting. That mechanism shall meet the criteria of Article 11(4). For further information see the annual report: <a href="#">20230911_Kurzbericht_§50_2023.pdf</a> (tradinghub.eu).<sup>28</sup></p>																		

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<sup>28</sup> Available in German only.



## 10 GREECE

Key features	
Name of balancing zone(s)	NNGTS (National Natural Gas Transmission System)
Distribution system part of balancing zone	No
Hub name (trading platform)	NGTP (Natural Gas Trading Platform)
VTP name	Hellenic Trading Point (HTP)
Implementation date of BAL NC	Implemented
Balancing responsible (Art. 4.4)	TSO – DESFA
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	Yes (procured via Public Tender according to Art. 8.3)  Balancing services are procured as STSPs are not providing the necessary response to keep transmission network within its operational limits and in the absence of liquidity of trade in STSPs.
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	No
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Implemented
Neutrality Arrangements (Art. 29–31)	Partially implemented (no credit risk management)  The costs and revenues are passed on to network users (according to Art.29.2 BAL NC): <ul style="list-style-type: none"> <li>▲ Procurement of balancing services</li> <li>▲ Purchase/sale of STSPs on balancing platform</li> <li>▲ System usage cost to use balancing services</li> </ul> Balancing neutrality charges are apportioned amongst network users based on their total transported quantity on a monthly basis.  No measure to mitigate possible default in payment of balancing charges by network users have been implemented. In case of a default attributable to a network user, losses are apportioned to the remaining network users.
Interim measures (Art. 45–50)	No
Information provision (Art. 32–42)	<b>Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)).</b> <b>Publication of aggregate neutrality charges and balancing charges (Art. 29.4).</b>  Report on the accuracy of the forecast of a network user's NDM off-takes (art.42.3): No NDM flows. DESFA has been appointed by the NRA as the NNGTS Forecasting Party, the required IT system is currently in development (estimated go-live in Q2 2024) therefore no forecasts are currently provided.

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A trading platform was introduced as of 21.03.2022.

## 11 HUNGARY

Key features	
Name of balancing zone(s)	Hungary
Distribution system part of balancing zone	No
Hub name (trading platform)	Two balancing markets: <ul style="list-style-type: none"> <li>Trading platform operated by CEEGEX Ltd.;</li> <li>Trading platform operated by FGSZ Trading Platform Ltd (Kereskedési Platform).</li> </ul>
VTP name	Magyar Gázkiegymelési Pont (MGP)
Implementation date of BAL NC	1 October 2015
Balancing responsible (Art. 4.4)	TSO – FGSZ Ltd
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	No
Linepack Flexibility Service (Art. 43–44)	Yes
WDOs (Art. 24–28)	Yes <p>The introduction of WDO was intended to improve the balance of the gas day portfolio of system users. Its main steps are:</p> <ul style="list-style-type: none"> <li>Notification to the network user when the limit is exceeded,</li> <li>Suspension of the right to sell on a trading platform,</li> <li>Reduction of exit volumes on the gas day, if necessary.</li> </ul>
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Implemented <p>Daily imbalance charges are adapted to take into account the price of locational products for the purpose of determining the marginal buy/sell price and the WAP.<sup>29</sup></p>
Neutrality Arrangements (Art. 29–31)	Implemented <p>The following costs and revenues are passed on to network users:</p> <ul style="list-style-type: none"> <li>the loss or gain on the purchase or sale of balancing gas,</li> <li>membership fees on trading platforms, and</li> <li>balancing gas purchase and sale variable fees.</li> </ul> <p>The neutrality charge is calculated on each gas day. The calculated charge is distributed among the system users, taking into account the delivery volumes and imbalance data. Financial settlement is carried out by the Central Clearing Party.</p> <p>The use of a clearing house to secure and settle the balancing activity is obligatory for all network user, in order to mitigate their possible default in payment of balancing charges. The clearing house operates with a complex security system including creditworthiness compliance, individual and collective securities.</p> <p>The losses of the TSO related to the balancing activity of the network user can be recovered through the neutrality pool.<sup>30</sup></p>
Interim measures (Art. 45–50)	No
Information provision (Art. 32–42)	<p><b>Publication of balancing actions</b> (Art. 9.4, Art. 32.2 and Art. 33.1(g)).</p> <p><b>Publication of aggregate neutrality charges and balancing charges</b> (Art. 29.4).</p> <p>Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3): Data not public.</p>

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Implementation of WDOs and LFS.

<sup>29</sup> [Link](#) to the approved and published daily imbalance charges methodology (Art. 20.2).

<sup>30</sup> [Link](#) to the NRA approved and published methodology for the calculation of the neutrality charges (Art. 30.2).

## 12 IRELAND

Key features	
Name of balancing zone(s)	Ireland
Distribution system part of balancing zone	Yes
Hub name (trading platform)	Marex Spectron
VTP name	Irish Balancing Point (IBP)
Implementation date of BAL NC	Not yet fully implemented (interim measures still applied)
Balancing responsible (Art. 4.4)	TSO – Gas Networks Ireland (GNI is both TSO and DSO)
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	No
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	No
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Implemented <sup>31</sup>  The daily imbalance charges are applied differently for imbalances occurring within the tolerated level of network users imbalance for any given day (First Tier imbalance quantity) and imbalance quantities that are greater than each network user's tolerance for the same day (Second Tier imbalance quantity).  The First Tier imbalance price will be calculated as equal to either the weighted average price (SAP) derived at the Irish trading platform (IBP), where there have been trades reported on the trading platform for that gas day, or to the SAP derived at the adjacent trading platform (NBP) if there has not been any trade registered on the Irish trading platform or that day.
Neutrality Arrangements (Art. 29–31)	Implemented  Costs and revenues arising from Imbalance charges, Balancing charges and Shrinkage charges are passed on to network users.  Financial security measures have been implemented in order to mitigate possible default in payment of charges by network users. If a default occurs the recovery provisions under the applicable Financial Security arrangement is enacted.
Interim measures (Art. 45–50)	Yes  As of 1 October 2020 all tolerances have been removed except a 25 % Tolerance at Renewable Natural Gas (RNG) Entry Points.  This tolerance apply currently only at Cush entry point (biomethane injection) and is needed to support the development of this nascent gas source. The development at Cush Injection Point has received government grant- aid to establish the physical feasibility of such a development. The Regulator will review the tolerances level as more entry points come on line (there are none predicted until the end of 2023 at the earliest) and the gas volumes become relevant.
Information provision (Art. 32–42)	<b>Publication of balancing actions</b> (Art. 9.4, Art. 32.2 and Art. 33.1(g)). <b>Publication of aggregate neutrality charges and balancing charges</b> (Art. 29.4). Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3): N/A

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<sup>31</sup> [Link](#) to the approved daily imbalance charge calculation methodology (Art. 20.2).

Key features	
Name of balancing zone(s)	Italy
Distribution system part of balancing zone	No
Hub name (trading platform)	PSV (MGAS)
VTP name	Punto di Scambio Virtuale (PSV)
Implementation date of BAL NC	1 October 2016
Balancing responsible (Art. 4.4)	TSO – SNAM
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	No
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	No
Incentives (Art. 11)	<p>Yes<sup>32</sup></p> <p>The incentive mechanism introduces measures aimed at the improvement of the information to the market and the efficiency of the TSO balancing actions. In particular, performance indicators have been defined by the Italian NRA according to the following five mechanisms:</p> <ol style="list-style-type: none"> <li>1) Offtakes forecast at the redelivery transport points (D-1 forecast vs. actual)</li> <li>2) Efficient TSO balancing actions: difference between SMPbuy SMPsell vs. SAP (Weighted Average Price)</li> <li>3) Residual balancing (use of linepack and operation storage within a predefined range)</li> <li>4) Efficient supplying of gas volumes for operating the system: difference between gas supply (forecasted) and effective gas volumes actually needed by the TSO to operate the system</li> <li>5) Anticipation of the system operating needs (volumes needed by the TSO to operate the system): difference between total gas supply (D plus D-1 auctions) and gas supply in the D-1 auction.</li> </ol> <p>Additionally, the TSO is incentivised to provide accurate forecast of non-daily metered offtakes at the redelivery transport points. In particular, the incentive is calculated proportionally to the difference between D-1 forecast and actual offtakes.</p>
Daily imbalance charges (Art. 19–23)	<p>Implemented<sup>33</sup></p> <p>As per decision of the NRA the price of locational products should be taken into account for the purpose of determining the marginal buy/sell price and the WAP. In practice, locational products have not been activated in the time period covered by this report.</p>
Neutrality Arrangements (Art. 29–31)	<p>Implemented<sup>34</sup></p> <p>The neutrality of Snam Rete Gas includes:</p> <ul style="list-style-type: none"> <li>▲ imbalance charges,</li> <li>▲ costs/revenues from: purchasing/selling STSPs and gas volumes for operating the system (e. g. for managing linepack variations)</li> <li>▲ costs/revenues from purchasing/selling gas volumes for OBA management at interconnection points with other national TSOs, storage and regasification plants.</li> </ul> <p>Incentive mechanisms are put in place based on algorithms determining for the TSO a premium only if balancing actions are efficient while a penalty is applied to the TSOs if balancing actions are not identified as efficient by the algorithms (according to the Art. 29.3 of the BAL NC). Premia/penalties are not affecting neutrality revenues.</p> <p>The tariff regulatory framework set by the NRA provides that the transportation tariff paid by network users includes a specific charge feeding a fund managed by a third party (Cassa per i Servizi Energetici e Ambientali – CSEA). Snam Rete Gas access to this fund in order to settle costs/revenues deriving from balancing actions.</p> <p>Financial guarantees and monitoring of network users' financial exposures are used as measures to prevent default in payment of balancing charges by network users. In case of a default in payment by users, Snam Rete Gas is fully reintegrated, net of enforced guarantees, by a fund managed by a third party (Cassa per i Servizi Energetici e Ambientali – CSEA). Snam Rete Gas is called to return to CSEA the amounts possibly recovered by the above NUs.</p>
Interim measures (Art. 45–50)	No

32 [Link](#) to Regulator's Resolution (Integrated Text on Gas Balancing).

33 [Link](#) to the approved daily imbalance charge calculation methodology (Art. 20.2): See Snam Rete Gas Network Code (chapter 9, paragraph 4.4).

34 [Link](#) to the NRA approved and published methodology for the calculation of the neutrality charges (Art. 30.2).

Key features	
Information provision (Art. 32–42)	<p><b>Publication of balancing actions</b> (Art. 9.4, Art. 32.2 and Art. 33.1(g)). See section “Regulation EU 312/2014, Art. 9 and 29 (rif.: Network code, chap. 9, § 1.3, C)”</p> <p><b>Publication of aggregate neutrality charges and balancing charges</b> (Art. 29.4). See section “Regulation EU 312/2014, Art. 29 (rif.: Network Code, chap. 9, § 1.3, A and B)”</p> <p>Report on the accuracy of the forecast of a network user’s NDM off-takes (Art. 42.3): <b>NDM Forecast Accuracy Report Reg. (EC) 312/2014 (snam.it)</b></p>

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## 14 LATVIA & ESTONIA

Key features	
Name of balancing zone(s)	Estonian – Latvian Balancing zone
Distribution system part of balancing zone	No
Hub name (trading platform)	GET Baltic
VTP name	Virtual Trading Point (VTP)
Implementation date of BAL NC	Joint Estonian-Latvian balancing zone operational since 1 January 2020
Balancing responsible (Art. 4.4)	TSOs have implemented TSO-TSO cooperation based market area manager as an internal entity of TSO: Conexus Baltic Grid System Control Centre.
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	<p>Yes (procured via Public Tender according to Art. 8.3 of the BAL NC)</p> <p>Balancing services are used when STSPs are not providing the necessary response to keep transmission network within its operational limits, in case if STSPs are economically less efficient, or in case if locational products are needed for balancing.</p>
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	No
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	<p>Implemented<sup>35</sup></p> <p>The daily imbalance quantity for network user’s balancing portfolio for each gas day is calculated by TSO in accordance with the following formula: daily imbalance quantity = inputs – off-takes</p> <p>The value of the small adjustment applied to determine the marginal prices has been updated<sup>36</sup> as of 01.12.2021:</p> <p>Values of currently applicable small adjustment:</p> <ul style="list-style-type: none"> <li>▲ marginal sell price (MSP) incentive factor value: 0.95</li> <li>▲ marginal buy price (MBP) incentive factor value: 1.10</li> </ul>

<sup>35</sup> [Link](#) to approved and published daily imbalance charge calculation methodology (Art. 20.2).

<sup>36</sup> [MSP and MBP incentive factors | Conexus](#)



Key features	
Neutrality Arrangements (Art. 29–31)	<p>Implemented</p> <p>Neutrality charge shall be set taking into account any such costs and revenues:</p> <ul style="list-style-type: none"> <li>▲ costs and revenues of TSO arising from daily imbalance charges;</li> <li>▲ costs and revenues of TSO arising from the balancing actions;</li> <li>▲ administrative costs of TSO arising from the balancing actions;</li> <li>▲ other costs and revenues of TSO related to the balancing activities undertaken by the TSO. This includes TSO costs arising from network user non-payment default provided the measures and requirements for securing fulfilment of contractual obligations, as foreseen in section 4 of the Regulation, were duly implemented.</li> </ul> <p>For each gas day, the daily neutrality charge shall be equal to the net sum of all costs and revenues recorded to the balancing neutrality account for the previous month in accordance with sub-paragraph 8.15. of the Regulation divided by the sum of all network users that are not deemed balanced in any of the gas days of the previous month allocated off-takes in the common balancing zone for the previous month. The daily neutrality charge shall be expressed in euro/MWh and be rounded to two decimals.</p> <p>The neutrality charge attributed to each network user that is not deemed balanced in any of the gas days of the previous month shall be equal to the product of daily neutrality charge as determined in accordance with sub-paragraph 8.16. of the Regulation and the sum of all network user's offtakes (including domestic exit, cross-border exit and VTP), for gas day D. The neutrality charge shall be expressed in euro, rounded to two decimals and shall be identified as a separate charge in the monthly imbalance settlement report and on the invoice and shall be identified as a separate charge in the monthly imbalance settlement report and on the invoice.<sup>37</sup></p> <p>When calculating the neutrality charge the TSO shall take into account such costs and revenues arising from the balancing actions, pursuant to sub-paragraph 8.15.2. of the Regulation, which are undertaken by the TSO in the current calendar month (M), but are attributable to the previous calendar month (M-1) for which the monthly settlement as foreseen in sub-paragraph 9.2. of the Regulation, is carried out.</p> <p>During the term of the balancing agreement the network user shall secure the fulfilment of contractual obligations by means of appropriate credit rating of the network user or collateral. The network user may simultaneously choose one or more types of collateral (security deposit or guarantee of a financial services provider or the affiliate entity). In case of a default attributable to a network user, the TSO is entitled to use collateral to cover liabilities of network user towards TSO. If this is not sufficient, costs can be included in the neutrality charge calculation provided the measures and requirements for securing fulfilment of contractual obligations were duly implemented.</p>
Interim measures (Art. 45–50)	No
Information provision (Art. 32–42)	<p>Publication of balancing actions (Art. 9.4, Art. 32.2 and Art. 33.1(g)): Information is published monthly on: <a href="#">Link</a></p> <p>Publication of aggregate neutrality charges and balancing charges (Art. 29.4): <a href="https://www.conexus.lv/neutrality-charge">https://www.conexus.lv/neutrality-charge</a> <a href="https://elering.ee/bilansihaldus-0">https://elering.ee/bilansihaldus-0</a></p> <p>Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3): Report shall be published every two years. Forecasting parties in common balancing zone have operated for less than two years.<sup>38</sup></p>

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<sup>37</sup> Links to the NRA approved and published methodology for the calculation of the neutrality charges (Art. 30.2) of **Elering** and **Conexus Baltic Grid**.

<sup>38</sup> The report is currently under preparation and will be published in the near possible time.

## 15 LITHUANIA

Key features	
Name of balancing zone(s)	Lithuania
Distribution system part of balancing zone	Yes
Hub name (trading platform)	GET Baltic
VTP name	LTVTP
Implementation date of BAL NC	Interim measures terminated as of 1 April 2019
Balancing responsible (Art. 4.4)	TSO (Amber Grid)
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	No
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	No
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Implemented <sup>39</sup>
Neutrality Arrangements (Art. 29–31)	<p>Implemented</p> <p>A neutrality account is established covering any costs and revenues related to the balancing activities, such as buying and selling balancing gas, also costs of balancing actions.</p> <p>A neutrality charge is introduced since 1 March 2022. The neutrality fee is calculated as the total amount of all revenues and costs related to balancing activities divided by the total amount of gas released during the accounting period.</p> <p>Credit risk management measures have been established to prevent default in payment of balancing charges, which give the TSO the right to request from network users to submit appropriate collateral.</p>
Interim measures (Art. 45–50)	No (tolerances removed as 1 April 2019)
Information provision (Art. 32–42)	<p>Publication of balancing actions (Art. 9.4, Art. 32.2 and Art. 33.1(g)): <b>Balancing actions   Amber Grid</b></p> <p>Publication of aggregate neutrality charges and balancing charges (Art. 29.4): <b>Neutrality fee   Amber Grid</b></p> <p>Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3): <b>Prisijungimas negalimas (eso.lt)</b></p>

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Neutrality charge as separate charge was introduced.

<sup>39</sup> Link to the approved daily imbalance charge calculation methodology (Art. 20.2) [Rules of balancing | Amber Grid](#)

## 16 THE NETHERLANDS

Key features	
Name of balancing zone(s)	TTF Market Area BBL <sup>40</sup>
Distribution system part of balancing zone	Yes
Hub name (trading platform)	ICE Exend Within-Day Market
VTP name	Title Transfer Facility (TTF)
Implementation date of BAL NC	1 October 2015
Balancing responsible (Art. 4.4)	TSO – GTS
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	No
Linepack Flexibility Service (Art. 43–44)	Yes  Network Users use the LFS if they have an imbalance at the end of the gas day. They pay a LFS fee which is currently set at 0.4 % of the neutral gas price. The LFS is provided by GTS solely. The revenues are returned to the network users via the neutrality charge and GTS does not make any additional costs, because the network buffer is used. The LFS is offered on a transparent and non-discriminatory basis. The charges only apply to network users who use the LFS (with a position other than 0 at the end of the gas day) and the provision of the LFS does not have a detrimental impact on cross-border trade. <sup>41</sup>
WDOs (Art. 24–28)	Yes (System wide (acc. to Art. 25.1)  The aim of the balancing action is to return the system to the border of the dark green zone. The gas that is delivered or received is assigned pro rata to the network users that cause the imbalance. The balance action therefore will not reset the position of a NU to zero.  Network users have access to near real time information on their own position and the balance of the whole system. If a balancing action is issued by GTS, this is announced by two notifications: one at ten minutes past the hour, and one at 15 minutes past the hour. A market order is placed randomly between 21 and 22 minutes past the hour (this 'randomisation' started in September 2020). NUs can manage their POS to manage their exposure. <sup>42</sup>  To ensure that the main costs for NUs in relation to their balancing obligations relate to their position at the end of the gas day, NUs pay the LFS fee ( $0.4 \% \times \text{abs}(\text{POS}) \times \text{neutral gas price}$ ) if their position is not zero at the end of the gas day. WDO obligations are cost reflective because the gas that is delivered/received as a result of the balancing actions is assigned pro rata to the causers, on the basis of the accountable POS of the hour of the transaction. The price charged to the causers is the volume-weighted average price of the gas bought/sold on the exchange.  No negative effect of the application of WDOs on TTF liquidity has been observed.
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	For GTS: GTS offers a linepack flexibility service (LFS). The imbalance quantity calculation has been adapted according to article 21.2 of the BAL NC to consider the LFS offered. The outcome of the calculation of the daily imbalance quantity minus the LFS quantity will always be zero. This is the final daily imbalance quantity. <sup>43</sup>  For BBL: BBL has an in=out regime. A BBL shipper only nominates at IP Bacton and gets this nomination confirmed from a BBL perspective, and therefore is always in balance in the BBL. At the Dutch side, the TTF market area, the shipper needs to hold a GTS portfolio which will reflect the difference between the IP Bacton confirmation of such shipper and his counter TTF position. If there is a difference between these two this shipper will get a balance position in its GTS TTF portfolio. BBL itself has no settlements with its BBL network users.

40 GTS and BBL have a joint entry/exit system, but with two different balancing regimes. On the Dutch side, BBL is integrated into the TTF market area and trades its capacity exclusively on IP Bacton in the UK.

41 Additional information on LFS offered: [Link](#)

42 For more information on the randomisation, see here: [Link](#)

43 [Link](#) to the approved daily imbalance charge calculation methodology (Art. 20.2).

Key features	
Neutrality Arrangements (Art. 29–31)	<p>Implemented in 2020</p> <p>The following costs/revenues are passed on to network users:</p> <ul style="list-style-type: none"> <li>▲ balancing actions that occur due to an emergency situation;</li> <li>▲ balancing actions that occurred due to a disturbance in the information systems;</li> <li>▲ revenues as a result of network users using the Linepack Flexibility Service;</li> <li>▲ costs as a result of losses due to default in payment.</li> </ul> <p>The neutrality charge is calculated with the same methodology as the tariffs, the RPM (reference price methodology). For every capacity product that is sold, a neutrality charge is charged to the network users. This way it is guaranteed that the neutrality costs (or revenues) are divided in proportion to the sold capacity products. Network users receive a monthly invoice where the payable amount payable or receivable arising from the neutrality charges is specified.<sup>44</sup></p> <p>Measures to prevent possible default in payment from network users have been implemented in 2020. Several safeguards in licensing and credit management systems have been introduced, such as early spent alerts and revisions of credit limits. In case of a default attributable to a network user, the losses recovered via the neutrality charge (after GTS has first tried to recover the costs from the network user that caused them).</p>
Interim measures (Art. 45–50)	No
Information provision (Art. 32–42)	<p><b>Publication of balancing actions</b> (Art. 9.4, Art. 32.2 and Art. 33.1(g)).</p> <p><b>Publication of aggregate neutrality charges and balancing charges</b> (Art. 29.4).</p> <p>Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3): In cooperation with market parties and DSOs, GTS decided to stop creating this complex report. Market parties accept that the current level of accuracy is sufficient.</p>

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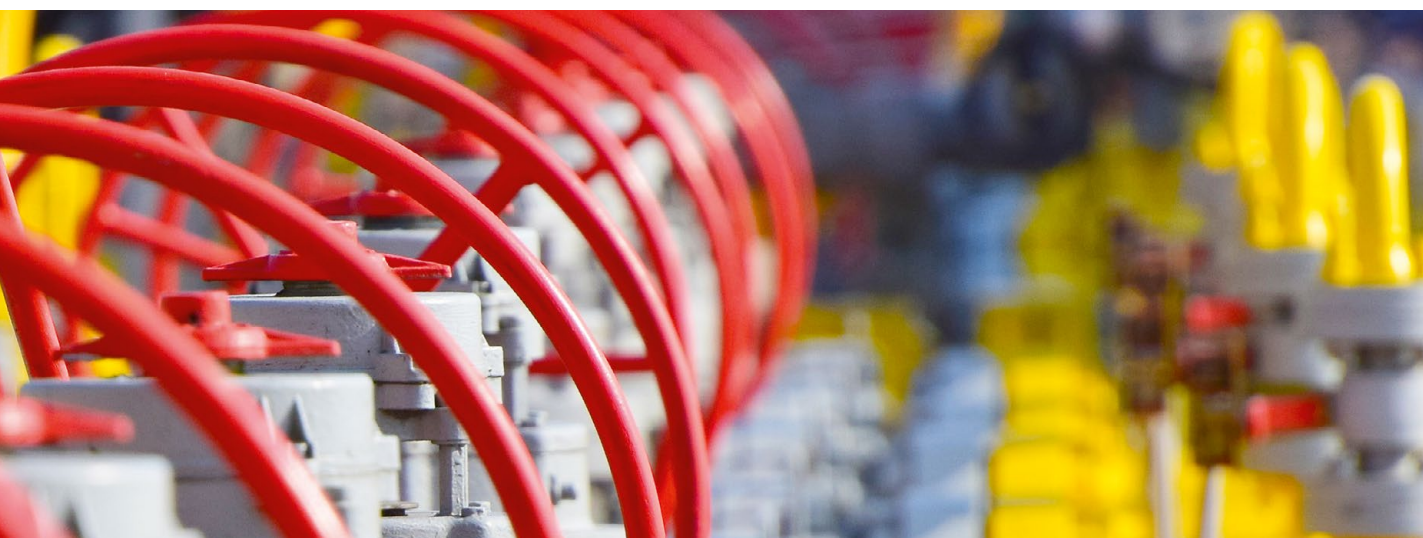
Picture courtesy of GAZ-SYSTEM



<sup>44</sup> [Link](#) to the NRA approved and published methodology for the calculation of the neutrality charges (Art. 30.2).

## 17 POLAND

Key features	
Name of balancing zone(s)	High-methane gas balancing area Low-methane gas balancing area TGPS gas balancing area
Distribution system part of balancing zone	Included in H and L-gas area
Hub name (trading platform)	Towarowa Gielda Energii S.A. (TGE)  Trades in adjacent balancing zones possible based on the NRA approval (EEX – Trading Hub Europe – Germany, EEX ETF – Joint Balancing Zone – Denmark and Sweden, GET Baltic – Lithuania), but has not been used yet
VTP name	VTP PL-H VTP TGPS VTP PL-L
Implementation date of BAL NC	1 April 2019 (removal of all interim measures)
Balancing responsible (Art. 4.4)	TSO – GAZ-SYSTEM
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented (Balancing platform removed as of 1 April 2019)
Balancing services (Art. 8)	Used in H-gas area (procured via Public tender according to Art. 8.3 of BAL NC)  Balancing services used by TSO do not affect the liquidity of the short term wholesale gas market. This service has been implemented because it was the only possibility to balance the small isolated part of this balancing area. TSO chose the balancing service according to the merit order mentioned in Art. 9 (only when there are no other possibilities to balance the system). <sup>45</sup>
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	No
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Implemented (interim imbalance charge removed as of 1 April 2019)  The daily imbalance quantity is calculated as the difference between the gas quantity that was delivered by the Shipper at the entry points and off-taken by the Shipper from the balancing area at the exit points in a given gas day. In case when the balancing group is created by more network users (“imbalance pooling”), the imbalance quantity is calculated as the difference of gas quantity delivered to the balancing area by all network users within the balancing group and off-taken by these network users at the exit points from the balancing area. <sup>46</sup>



<sup>45</sup> [Link](#) to the published information on balancing services.

<sup>46</sup> Links to the approved daily imbalance charge calculation methodologies (Art. 20.2) for **NTS** and **TGPS** Bal. Zones.



Key features	
Neutrality Arrangements (Art. 29–31)	<p>Implemented</p> <p>The following costs and revenues are passed on to network users:</p> <ol style="list-style-type: none"> <li>1) costs and revenues arising from daily imbalance settlements</li> <li>2) costs and revenues arising from the balancing actions undertaken by the transmission system operator,</li> <li>3) other costs and revenues related to the balancing activity.</li> </ol> <p>The neutrality charge is calculated based on the costs incurred and revenues generated in a given gas month and is apportioned amongst all network users active in this gas month in the balancing area (the apportionment is done pro-rata to the usage of entry and exit points by the network users).<sup>47</sup></p> <p>In order to mitigate the risk of Network users' default in payment regarding any payment due for the imbalance charges and balancing neutrality charges, the TSO imposed contractual requirements concerning financial security safeguards on all network users.</p> <p>The Financial Security may be established by the shipper only in one of the following forms:</p> <ul style="list-style-type: none"> <li>▲ a cash deposit, returned after settlement of the completed transmission service,</li> <li>▲ an irrevocable and unconditional bank or insurance guarantee</li> <li>▲ an irrevocable and unconditional surety, along with a shipper's declaration on submission to enforcement executed as a notarial deed, including the obligation to pay an amount up to the value specified in such declaration under the procedure set forth in the Code of Civil Procedure</li> <li>▲ a promissory note with a declaration on submission to enforcement executed as a notarial deed including the obligation to pay a sum of money up to the amount specified in the Code of Civil Procedure.</li> </ul> <p>The TSO may use the Financial Security if the shipper delays payment for services provided by the TSO at least fourteen days after the payment deadline for providing such services, after TSO's notification sent to the shipper by e-mail or the SWI informing of the intention to terminate, respectively, the transmission contract, ability allocation, or capacity allocation. The TSO is entitled to satisfy claims from the Financial Security, including overdue receivables.</p>
Interim measures (Art. 45–50)	No (terminated on 1 April 2019)
Information provision (Art. 32–42)	<p><b>Publication of balancing actions</b> (Art. 9.4, Art. 32.2 and Art. 33.1(g)).</p> <p><b>Publication of aggregate neutrality charges and balancing charges</b> (Art. 29.4).</p> <p><b>Report on the accuracy of the forecast of a network user's NDM off-takes</b> (Art. 42.3).</p>

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<sup>47</sup> [Link](#) to the NRA approved and published methodology for the calculation of the neutrality charges (Art. 30.2).

## 18 PORTUGAL

Key features	
Name of balancing zone(s)	Portugal
Distribution system part of balancing zone	No
Hub name (trading platform)	MIBGAS
VTP name	Portuguese Virtual Trading Point (VTP)
Implementation date of BAL NC	October 2016 <sup>48</sup>
Balancing responsible (Art. 4.4)	TSO – REN
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Trading platform established as of March 2021.  Although the trading platform was established, the rules establishing the balancing actions for the TSO via STSP were only published by the NRA in May 2021 with entry into force as of 1 October 2021.
Balancing services (Art. 8)	Yes – Procured until 30 September 2021 via other procedure according to Art. 8.4 of BAL NC.  Until the establishment of a trading platform, the balancing services were the only tool for performing the balancing actions needed. The new mechanism for balancing services is valid as of 1 October 2021 and is compatible with the balancing actions with STSP on trading platform.
Linepack Flexibility Service (Art. 43–44)	Yes  The linepack flexibility service allows a daily deviation between inputs and off-takes to the maximum subscribed value, with later gas reposition. Until 1 October 2021, the Linepack Flexibility Service was not offered based on a competitive mechanism nor it had a price reflecting the respective costs. The LFS was introduced by Diretiva N° 18/2016, as a transitional arrangement to adapt to BAL NC principles. The linepack flexibility depended on the customer consumption portfolios with daily measurement, recorded in the previous year. This flexibility allowed to absorb the differences between a NU's entries and exits, thus reducing the imbalance that would potentially be attributed to it. This flexibility has a physical nature and limited the balancing role of the TSO. Until end of GY 2020/21, the LFS has been offered free of charge, which was justified by the absence of a trading platform. From 01 October 2021 the new mechanism fully complies with article 44.1 of BAL NC.
WDOs (Art. 24–28)	No
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Implemented <sup>49</sup>  For each network user, the total gas delivered to and off-taken from the transmission network is taken into account for the purpose of calculation of its daily imbalance quantity; when there is a difference between intakes and off takes, considering eventual linepack flexibility service contracted, a daily imbalance is calculated. The daily imbalance quantity is considered as final imbalance.  Due to the pandemic situation, in April 2020 the NRA modified the rules to determine the daily marginal prices <sup>50</sup> , changing the prices applicable to the imbalances (Article 8th). In more detail, concerning the calculation of prices, for the determination of the weighted average price (WAP) it is used the WAP of Mibgás (Spain) set to 25 °C (WPA of Mibgás × 1,0026). For the calculation of the Marginal Buy price, it is used the WAP and added the interconnection charges (the quarterly tariffs in Portugal and the daily tariffs in Spain) multiplied by the penalty factor (1 + 2.5 %). For the calculation of the Marginal Sell price it is used the WAP and subtracted the interconnection charges (the quarterly tariffs in Portugal and the daily tariffs in Spain) multiplied by the penalty factor (1–2.5 %).  The daily imbalance quantity calculation is adapted in case a LFS is offered. When this service applies, the imbalance is calculated as follows for each network user i that uses the service, on day d:  $\text{Imbalance } i,d = \text{Supplies } i,d - \text{Offtakes } i,d + \text{Adjustment } i,d + \text{LFS } i,d$

48 Whilst the implementation of the BAL NC had started already in October 2016, a number of essential provisions (i. e. organised market with functioning trading platform and STSPs) were not implemented.

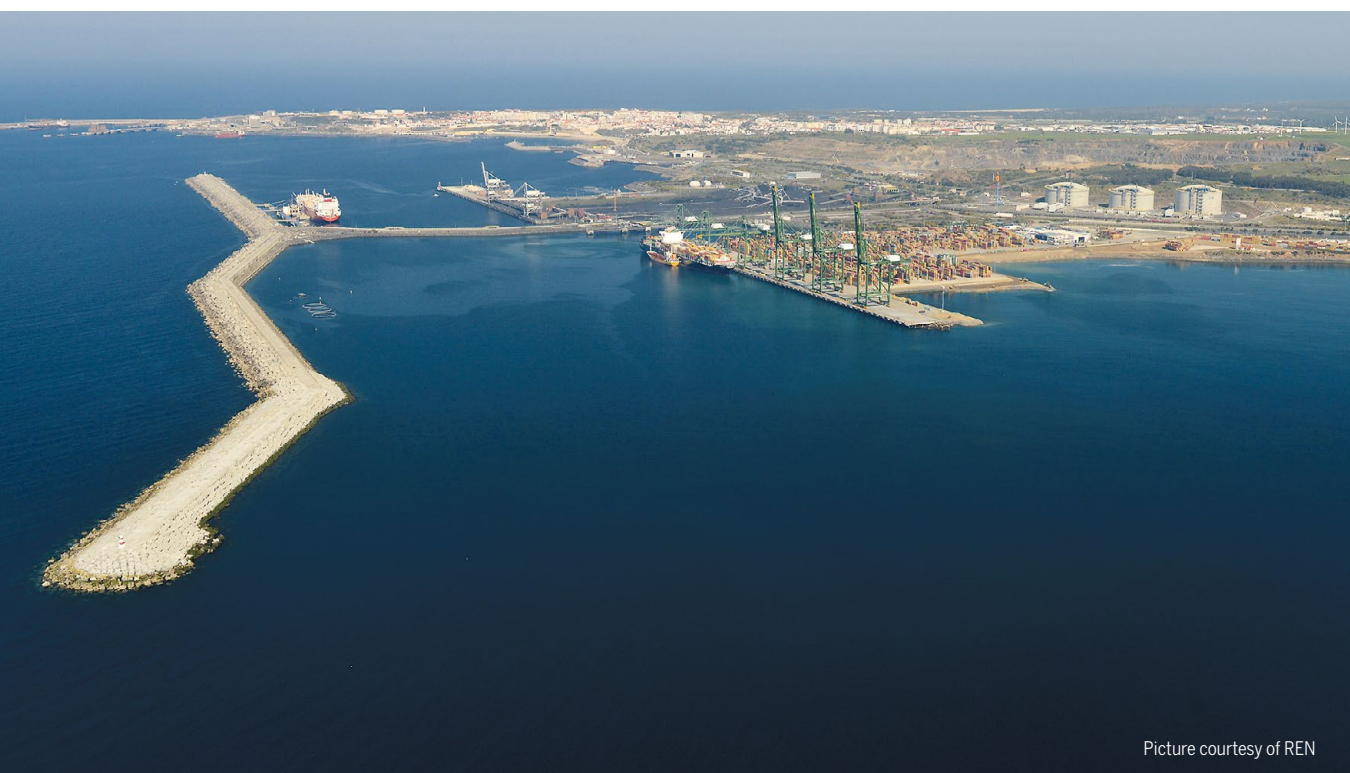
49 [Link](#) to the approved daily imbalance charge calculation methodology (Art.20.2).

50 National Regulation 356-A/2020 published on the 8<sup>th</sup> April 2020.

Key features	
Neutrality Arrangements (Art. 29–31)	<p>Implemented<sup>51</sup></p> <p>The following costs and revenues arising from balancing activity are included in the neutrality account:</p> <ul style="list-style-type: none"> <li>▲ Daily imbalance charge</li> <li>▲ Financial reconciliation</li> <li>▲ Balancing actions carried out by the TSO</li> <li>▲ Cost of access to trading platforms for the purchase and sale of gas</li> <li>▲ Default in stocks charges</li> <li>▲ Linepack Flexibility Service Charges</li> <li>▲ Cost of guarantees for financing operations for the purpose of carrying out the compensation actions</li> </ul> <p>Until 1 October 2021 any corrections on the non-daily-metered points were made by a later physical compensation.</p> <p>From 1 October 2021 a financial reconciliation was implemented for this purpose, which is included in the neutrality.</p> <p>Credit risk management measures have been established to prevent default in payment of balancing charges by network users, which are provision of a bank guarantee and retention of sales made on a trading platform. Guarantees are retained in case of a default in payment attributable to a network user.</p>
Interim measures (Art. 45–50)	No
Information provision (Art. 32–42)	<p><b>Publication of balancing actions</b> (Art. 9.4, Art. 32.2 and Art. 33.1(g)).</p> <p><b>Publication of aggregate neutrality charges and balancing charges</b> (Art. 29.4).</p> <p><b>Report on the accuracy of the forecast of a network user's NDM off-takes</b> (Art. 42.3).</p>

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51 [Link](#) to the NRA approved and published methodology for the calculation of the neutrality charges (Art. 30.2).



Picture courtesy of REN

## 19 ROMANIA

Key features	
Name of balancing zone(s)	Romanian National Transmission System Balancing Zone (RO-NTS)
Distribution system part of balancing zone	No
Hub name (trading platform)	BRM-WD
VTP name	VTP
Implementation date of BAL NC	Termination of interim measures (interim imbalance charges, tolerances) as of 1 April 2019
Balancing responsible (Art. 4.4)	TSO – Transgaz
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	No
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	No
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Implemented <sup>52</sup>
Neutrality Arrangements (Art. 29–31)	<p>Implemented</p> <p>Any costs and revenues arising from imbalances, purchases/sales TSO/storage and withdrawal on TSO account are passed on to network users.</p> <p>The value of the neutrality account is divided pro-rata by the quantity transported through the NTS.<sup>53</sup></p> <p>In order to mitigate possible default in payment of balancing charges, network users are obliged to provide financial guarantees according to the contractual clauses. In case of a default in payment the final imbalance is compared with the guarantee established and if the imbalance is not covered by the guarantee, the TSO sends the payment notification to the NU. The guarantee for the balancing contract is established by the regulations approved by the NRA, however it does not fully cover the risk of non-payment. The regulations do not ensure the recovery by the TSO of losses resulting from these situations. In all cases, steps have been taken for recovery through the court of law.</p>
Interim measures (Art. 45–50)	No (Interim imbalance charge, tolerances terminated as of 1 April 2019)
Information provision (Art. 32–42)	<p><b>Publication of balancing actions</b> (Art. 9.4, Art. 32.2 and Art. 33.1(g)).</p> <p><b>Publication of aggregate neutrality charges and balancing charges</b> (Art. 29.4):</p> <p>Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3):</p> <p>A report shall be published every two years. The first report shall be published in 2024.</p>

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<sup>52</sup> [Link](#) to the approved daily imbalance charge calculation methodology (Art. 20.2).

<sup>53</sup> [Link](#) to the NRA approved and published methodology for the calculation of the neutrality charges (Art. 30.2).

## 20 SLOVENIA

Key features	
Name of balancing zone(s)	Slovenia
Distribution system part of balancing zone	Yes
Hub name (trading platform)	VTP-SI
VTP name	VTP-SI
Implementation date of BAL NC	1 October 2015
Balancing responsible (Art. 4.4)	TSO – Plinovodi
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	Yes (procured via public tender procedure according to Art. 8.3 of BAL NC) The only source of natural gas are the border IPs, therefore the TSO needs a last resort balancing services to keep transmission network within its operational limits in case STSPs do not provide necessary response.
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	No
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Implemented Imbalances are calculated based on each balancing group position as intake to the system –/– offtake from the system +/– trades on the VTP and system differences resulting from the measurement uncertainties. If WAP and marginal prices cannot be retrieved, the last 5 transactions of any trades on the trading platform are considered for the purpose of determining the applicable prices. <sup>54</sup>
Neutrality Arrangements (Art. 29–31)	Implemented Any costs and revenues arising from payment and receipt of daily imbalance charges, balancing actions charges and other charges related to TSO's balancing activities are passed on to the network users. The sum of the balancing neutrality charges is apportioned among the balancing groups based on the sum of all the imbalances of all the balancing groups and the share of each balancing group. <sup>55</sup> In order to mitigate possible default in payment of balancing charges by network users a financial guarantee as an insurance for meeting the liabilities set forth in the concluded balancing contract.
Interim measures (Art. 45–50)	No
Information provision (Art. 32–42)	<b>Publication of balancing actions</b> (Art. 9.4, Art. 32.2 and Art. 33.1(g)). <b>Publication of aggregate neutrality charges and balancing charges</b> (Art. 29.4). Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3): Not available.

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<sup>54</sup> [Link](#) to the approved daily imbalance charge calculation methodology (Art. 20.2).

<sup>55</sup> [Link](#) to the NRA approved and published methodology for the calculation of the neutrality charges (Art. 30.2).



## 21 SLOVAKIA

Key features	
Name of balancing zone(s)	Slovakia
Distribution system part of balancing zone	No
Hub name (trading platform)	No trading platform implemented. Balancing platform used by Eustream. TSO can trade on adjacent balancing platform (AT) CEGH EEX
VTP name	VTP
Implementation date of BAL NC	Not yet fully implemented (interim measures still applied)
Balancing responsible (Art. 4.4)	TSO – Eustream
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Not yet fully implemented
Balancing services (Art. 8)	Yes (procured via public tender procedure according to Art. 8.3 of BAL NC) Balancing services are used as there is no trading platform.
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	No
Incentives (Art. 11)	No
Daily imbalance charges (Art. 19–23)	Not yet implemented (interim imbalance charge applied)
Neutrality Arrangements (Art. 29–31)	Implemented Any costs and revenues arising from payment/receival of imbalance charges, balancing actions costs and revenues, administrative and other costs are passed on to network users. The balancing charge is apportioned among network users based on the allocated capacity for entry and/or exit border points. <sup>56</sup> In order to mitigate possible default in payment of balancing charges, network users are obliged to provide a financial security.
Interim measures (Art. 45–50)	Yes Balancing platform (planned termination in near future) Interim imbalance charge: applicable price derived from balancing platform trades. The price applied (in EUR/MWh) to determine the <b>Negative</b> Daily Imbalance Charge shall be the higher of the following two prices: (i) The highest purchase price of gas purchases made on a balancing platform for the relevant gas day; the purchase price is the weighted average of prices achieved in one auction made on the balancing platform. (ii) Index (CEGHIX + 0.5) × (1 + small adjustment expressed in %). SA = 7 % The price applied (in EUR/MWh) to determine the <b>Positive</b> Daily Imbalance Charge shall be the lower of the following two prices: (i) the lowest sale price of gas sales made on a balancing platform for the relevant gas day; the sale price is the weighted average of prices achieved in one auction made on the balancing platform. ii) Index (CEGHIX <sup>57</sup> + 0.5) × (1 + small adjustment expressed in %). SA = 7 %
Information provision (Art. 32–42)	<b>Publication of balancing actions</b> (Art. 9.4, Art. 32.2 and Art. 33.1(g)). <b>Publication of aggregate neutrality charges and balancing charges</b> (Art. 29.4):. Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3): Not applicable – no NDM customers in Slovakia.

### MAIN UPDATES IMPLEMENTED IN GY 2021/22 – GY 2022/23

<sup>56</sup> [Link](#) to the NRA approved and published methodology for the calculation of the neutrality charges (Art. 30.2).

<sup>57</sup> The CEGHIX Index is the price index of the trading venue CEGH Gas Exchange of Wiener Börse for the relevant gas day.

Key features	
Name of balancing zone(s)	Spain
Distribution system part of balancing zone	No
Hub name (trading platform)	MIBGAS
VTP name	Punto Virtual de Balance (PVB)
Implementation date of BAL NC	1 October 2016
Balancing responsible (Art. 4.4)	In the Spanish Gas System, the Balancing regulation designates Enagás in its role of Technical System Manager (GTS) with the responsibility of the residual operational balancing of the transmission system, together with the responsibility for calculating the user daily imbalances and for invoicing the daily imbalance charges.
Trade notifications, trading platforms, STSPs (Art. 5, 7, 9, 10)	Implemented
Balancing services (Art. 8)	No
Linepack Flexibility Service (Art. 43–44)	No
WDOs (Art. 24–28)	No
Incentives (Art. 11)	Yes  The incentives scheme is based on the performance of Enagás in its role of Technical Manager of the System. It takes into account the effectiveness of the Technical Systema Manager on the selection and use of balancing actions and it is subject to periodical review by the NRA (CNMC).
Daily imbalance charges (Art. 19–23)	Implemented  On the day after the gas day D, Enagás GTS calculates each user's provisional imbalance for the gas day as the difference between the user's inputs and off-takes in the network during the gas day. The calculation of the daily imbalance quantity takes into account the unaccounted for gas.  In recent Gas Years 2019/20 and 2020/21 the value of the small adjustment applied to the weighted average price to determine the marginal buy/sell prices has been increased to 3 %. <sup>58</sup>
Neutrality Arrangements (Art. 29–31)	Implemented  The methodology to determine the neutrality charge <sup>59</sup> foresee that the costs and revenues arising from the balancing actions are apportioned as follows: the use of STSP title products are assigned to all network users while the use of locational products are assigned to network users which use entry points.  In order to ensure that the aggregated financial loss is limited to TSO's inefficient incurred costs and revenues the performance of the Technical System Manager is evaluated through efficiency factors that have a maximum lower limit that is defined by the NRA.  When the net economic result of the Technical System Manager is:  <ul style="list-style-type: none"> <li>▲ Negative, users with accumulated monthly imbalance shall pay the Technical System Manager the aforementioned net economic result in proportion to their accumulated monthly imbalance.</li> <li>▲ Positive, no amount related to the calculated amount will be charged to the users and this result will be kept in the common account for the settlement of daily imbalances and title transfer balancing actions until the end of the year. Annually, the NRA determines the destination of the quantities in this account.</li> </ul> Financial guarantees are required with the aim of mitigating the non-payment of any amount owed from paid or pending settlements. In the event of non-payment by a network user, the Technical System Manager, will act in accordance with the following order of priority: <ul style="list-style-type: none"> <li>▲ Execution of the user's guarantees.</li> <li>▲ In the event that the result of any other settlement to the user is a payment by the Technical System Manager in favor of the user, the Technical System Manager shall deduct the amount due from such payment.</li> <li>▲ Request from the operators of the trading platforms and central counterparties the amounts withheld by them in accordance with NRA's Circular 2/2020.</li> <li>▲ If the application of all the above is insufficient, the Technical System Manager shall carry out all the actions within its reach for the recovery of the unpaid amounts, in accordance with the provisions of NRA's Circular 2/2020.</li> </ul>
Interim measures (Art. 45–50)	No

58 [Link](#) to the approved daily imbalance charge calculation methodology (Art. 20.2).

59 [Link](#) to the NRA approved and published methodology for the calculation of the neutrality charges (Art. 30.2).

Key features	
Information provision (Art. 32–42)	<p>Publication of balancing actions (Art. 9.4, Art. 32.2 and Art. 33.1(g)):  <b>Markets and Balances – GTS Publications – Enagás (enagas.es)</b></p> <p>Publication of aggregate neutrality charges and balancing charges (Art. 29.4):  This information is provided through the TPA Portal SL-ATR (Logistics System for Third Party Network Access).</p> <p>Report on the accuracy of the forecast of a network user's NDM off-takes (Art. 42.3):  The Technical Manager of the System is responsible for the calculation and publication in the TPA Portal SL-ATR, on a daily and monthly basis, of indicators related to the quality of the users NDM off-takes forecasts. Each year and based on the above information, the Technical System Operator shall prepare an annual report on the values of the indicators calculated for the previous calendar year which is sent to the Ministry and NRA. First report was produced in 2018.</p>

## MAIN UPDATES IMPLEMENTED IN GY 2021/22 – GY 2022/23



# ANNEX III: INFORMATION PROVISION

				Frequency of forecast updates or of apportionment of measured flows per day				Intraday metered off-takes (Art. 34.3)
				Intraday metered inputs and off-takes (Art. 34.2)	Daily metered off-takes (applicable to Variant 1) (Art. 35.1)	Non daily metered off-takes (Art.36.1)		
						D-1	D	
Country	Balancing zone	Information model/unit	Category of information provided	Number of updates (measured flows)/day	Number of updates (apportionment of measured flows)/day	Number of forecasts/day [D-1]	Number of updates/day [D]	1 <sup>st</sup> update on D (measured flows, Art. 34.3) [hour – hh:mm; winter time]
AT	Market Area East	BASE CASE	Intraday metered inputs and off-takes, Non-daily metered off-takes	24	–	18	24	7:50 CET (for final customers above 10 MW contracted capacity)
BE	BeLux-H	VARIANT 1	Intraday metered inputs and off-takes, Daily metered inputs and off-takes, Non-daily metered off-takes	24	24	–	24	07:00 CET
BE	BeLux-L	VARIANT 1	Intraday metered inputs and off-takes, Daily metered inputs and off-takes, Non-daily metered off-takes	24	24	–	24	07:00 CET
BG	Balancing Zone Bulgaria	VARIANT 1	Intraday metered inputs and off-takes, Daily metered inputs and off-takes.	24	4	–	–	07:00 CET
BG	ICGB	VARIANT 1	Intraday metered inputs and off-takes.	2	–	–	–	11:00 UTC
CZ	Czech Republic	BASE CASE	Daily metered inputs and off-takes, Non-daily metered off-takes	–	–	1	2	–
DE	Trading Hub Europe	VARIANT 2	Intraday metered inputs and off-takes, Non-daily metered off-takes	24	–	1	–	16:00 CET. Additionally, network users can request for updates immediatly after the first hour of the gasday.
DK/SE	Joint Balancing Zone - DK/SE	BASE CASE	Intraday metered inputs and off-takes, Daily metered inputs and off-takes, Non-daily metered off-takes	5	–	1	5	13:45 CET
ES	Spain	BASE CASE	Intraday metered inputs and off-takes, Daily metered inputs and off-takes, Non-daily metered off-takes	2	–	1	2	14:00 CET
FI	Finnish Balancing Zone	BASE CASE	Intraday metered inputs and off-takes, Daily metered inputs and off-takes	Allocation based on metered data	–	–	–	40 minutes after each hour for points connected to work is available for NUTS
FR	Trading Region France (GRTGaz)	BASE CASE	Intraday metered inputs and off-takes, Non-daily metered off-takes	24	–	17	21	07:55 UTC
FR	Trading Region France (Teréga)	BASE CASE	Intraday metered inputs and off-takes, Non-daily metered off-takes	24 by TSO (Distrib + Indus); 2 by DSOs (Distrib)	–	5 by TSOs on general values metered + non metered (distrib); 2 by DSO for forecasts on non-metered points (distrib)		06:40 UTC
GR	Greece	BASE CASE	Intraday metered inputs and off-takes	5	–	–	–	10:00 CET
HR	Croatia	BASE CASE	Intraday metered inputs and off-takes, Daily metered inputs and off-takes, Non-daily metered off-takes	2	–	1	2	10:00 CET



Time of provided forecasts or of provided apportionment of measured flows per day						Period of provided allocation		
Inputs and off-takes (Art. 34)	Daily metered off-takes (applicable to Variant 1) (Art.35.2)		Non daily metered off-takes (Art. 36)			Initial allocation for day D		Final allocation for day D (Art. 37.3)
			D-1	D		No interim measures (Art. 37.1)	Interim measures applied (Art. 37.2)	
2 <sup>nd</sup> update on D (measured flows, Art.34.4) [hour – hh:mm; winter time]	1 <sup>st</sup> update on D (apportionment of measured flows) [hour – hh:mm; winter time]	2 <sup>nd</sup> update on D (apportionment of measured flows) [hour – hh:mm; winter time]	Forecast (Art. 36.1.a) [hour – hh:mm; winter time]	1 <sup>st</sup> update on D (forecast (Art. 36.2)/ apportionment of measured flows (Art. 36.4)) [hour – hh:mm; winter time]	2 <sup>nd</sup> update on D (forecast (Art.36.3)/ apportionment of measured flows (Art.36.4)) [hour – hh:mm; winter time]	Number of days or hours after day D	Number of days or hours after day D	Number of days or hours after day D
8:50 CET (for final customers above 10 MW contracted capacity)	–	–	12:00 CET	06:00 CET	07:00 CET	Balance group position provided hourly starting at D, 6:00 CET	–	17 working days after the respective month
08:00 CET	07:00 CET	08:00 CET	–	07:00 CET	08:00 CET	provided each hour and not later than 30' after the allocated hour	–	M+1 (by 10 <sup>th</sup> business day of the month)
08:00 CET	07:00 CET	08:00 CET	–	07:00 CET	08:00 CET	provided each hour and not later than 30' after the allocated hour	–	M+1 (by 10 <sup>th</sup> business day of the month)
08:00 CET	07:00 CET	08:00 CET	–	–	–	1 h	–	2 h
15:00 UTC	–	–	–	–	–	24 hours	–	Fifth day following the conclusion of each month
–	–	–	13:00 CET	13:00 CET	23:00 CET	7 hours	–	11 days after the end of month
19:00 CET. Additionally, network users can request for updates immediatly after the first hour of the gasday.	–	–	12:00 CET	–	–	7 hours	–	M + 2M – 10 WD
16:45 CET	–	–	13:00 CET	13:45 CET	16:45 CET	D+1 11:15 CET	–	Month+1 (correction rounds in M+4 and M+15)
21:00 CET	–	–	13:00 CET	14:00 CET	21:00 CET	1 day	–	m (month)+15
hour the metered data the transmission networks	–	–	The estimation is produced by the TSO based on the historical data.	–	–	D+1 (12:00 UTC)	–	sixth gas day of each Gas Month M+1 (8:00 UTC)
08:55 UTC	–	–	13:26 UTC	06:31 UTC	07:31 UTC	7 h after EOD (D+1 12:00 UTC)	–	10 <sup>th</sup> working day M+1
07:30 UTC	–	–	12:00 UTC (and 13:00 UTC) TSO forecasts are updated 5 times	13:00 UTC TSO forecasts are updated 9 times		7 h after EOD (D+1 12:00 UTC)	–	10 <sup>th</sup> working day M+1
13:15 CET	–	–	Although DESFA has been appointed by the NRA as the NNGTS Forecasting Party, the required IT system is currently in development (estimated go-live beginning of 2024) therefore no forecasts are currently provided	Although DESFA has been appointed by the NRA as the NNGTS Forecasting Party, the required IT system is currently in development (estimated go-live beginning of 2024) therefore no forecasts are currently provided		7 hours	–	10 working days
18:00 CET	–	–	12:00 CET	13:00 CET	17:00 CET	D+1	–	M+1



				Frequency of forecast updates or of apportionment of measured flows per day				Intraday metered off-takes (Art. 34.3) [hour – hh:mm; winter time]
				Intraday metered inputs and off-takes (Art. 34.2)	Daily metered off-takes (applicable to Variant 1) (Art. 35.1)	Non daily metered off-takes (Art.36.1)		
						D-1	D	
Country	Balancing zone	Information model/unit	Category of information provided	Number of updates (measured flows)/day	Number of updates (apportionment of measured flows)/day	Number of forecasts/day [D-1]	Number of updates/day [D]	1 <sup>st</sup> update on D (measured flows, Art. 34.3) [hour – hh:mm; winter time]
HU	Hungary	VARIANT 1	Intraday metered inputs and off-takes	2	–	–	–	14:00 CET
IE	Ireland	BASE CASE	Intraday metered inputs and off-takes, Daily metered inputs and off-takes, Non-daily metered off-takes	24	1	1	4	05:00 GMT
IT	Italy	BASE CASE	Intraday metered inputs and off-takes, Daily metered inputs and off-takes, Non-daily metered off-takes	2	–	1	2	14:00 CET
LT	Lithuania	BASE CASE	Daily metered inputs and off-takes, Non-daily metered off-takes	–	–	1	2	–
LV/EE	Estonian - Latvian balancing zone	BASE CASE	Daily metered inputs and off-takes; Non-daily metered off-takes	–	–	1	2	–
NL	the Netherlands	VARIANT 1	Intraday metered inputs and off-takes, Non-daily metered off-takes"	287	–	–	287	06:05 CET
PL	High-methane gas balancing area	BASE CASE	Intraday metered inputs and off-takes, Daily metered inputs and off-takes, Non-daily metered off-takes	2	–	1	2	13:00 UTC
PL	Low-methane gas balancing area	BASE CASE	Intraday metered inputs and off-takes, Daily metered inputs and off-takes, Non-daily metered off-takes	2	–	1	2	13:00 UTC
PL	TGPS gas balancing area	BASE CASE	Intraday metered inputs and off-takes	–	–	–	–	–
PT	Portugal	VARIANT 2	Intraday metered inputs and off-takes, Daily metered inputs and off-takes, Non-daily metered off-takes	3	–	1	-	13:00 WET
RO	Romania	BASE CASE	Intraday metered inputs and off-takes, Daily metered inputs and off-takes	2	–	1	2	11:00 UTC
SI	Slovenia	VARIANT 1	Intraday metered inputs and off-takes, Daily metered inputs and off-takes	2	2	–	2	14:00 CET
SK	Slovakia	No info model in place (no DM nor NDM customers)	Intraday metered inputs and off-takes	24	–	–	–	06:20 CET

Time of provided forecasts or of provided apportionment of measured flows per day						Period of provided allocation		
Inputs and off-takes (Art. 34)	Daily metered off-takes (applicable to Variant 1) (Art.35.2)		Non daily metered off-takes (Art. 36)			Initial allocation for day D		Final allocation for day D (Art. 37.3)
			D-1	D		No interim measures (Art. 37.1)	Interim measures applied (Art. 37.2)	
2 <sup>nd</sup> update on D (measured flows, Art.34.4) [hour – hh:mm; winter time]	1 <sup>st</sup> update on D (apportionment of measured flows) [hour – hh:mm; winter time]	2 <sup>nd</sup> update on D (apportionment of measured flows) [hour – hh:mm; winter time]	Forecast (Art. 36.1.a) [hour – hh:mm; winter time]	1 <sup>st</sup> update on D (forecast (Art. 36.2)/ apportionment of measured flows (Art. 36.4)) [hour – hh:mm; winter time]	2 <sup>nd</sup> update on D (forecast (Art.36.3)/ apportionment of measured flows (Art.36.4)) [hour – hh:mm; winter time]	Number of days or hours after day D	Number of days or hours after day D	Number of days or hours after day D
18:00 CET	–	–	–	–	–	6 hours, (D+1 12:00 CET)	–	–
07:00 GMT	09:00 GMT	–	09:00 GMT	09:00 GMT	15:45 GMT	D+1	D+1 – M+4	M+5
18:00 CET	–	–	13:00 CET	14:00 CET	18:00 CET	1 day	–	28 days after the end of the month M for each day of the month M
–	–	–	10:00 UTC	11:00 UTC	13:00 UTC	6 hours	–	3 working days after the end of the month
–	–	–	11:00 UTC	08:00 UTC	13:00 UTC	No later than 13:00 UTC (winter time) or 12:00 UTC (daylight saving) of gas day D+1	–	No later than 07:00 UTC daylight saving and 08:00 UTC winter time on 6 <sup>th</sup> calendar day after the reporting period
06:10 CET	–	–	–	06:05 CET	06:10 CET	15 minutes after EOD (06:15 CET)	–	15 minutes after EOD (06:15 CET)
17:00 UTC	–	–	12:00 UTC	13:00 UTC	19:00 UTC	6 hours after day D	–	without undue delay after the end of the gas month, usually in the middle of the next gas month
17:00 UTC	–	–	12:00 UTC	13:00 UTC	19:00 UTC	6 hours after day D	–	without undue delay after the end of the gas month, usually in the middle of the next gas month
–	–	–	–	–	–	–	–	no later than 7 <sup>th</sup> day of the following gas month
20:00 WET	–	–	11:00 WET	–	–	1 day	–	M+6
19:00 UTC	–	–	14:00 UTC	15:00 UTC	20:00 UTC	7 hours after day D	–	7 hours after day D
20:00 CET	14:00 CET	20:00 CET	–	14:00 CET	20:00 CET	4 hours	–	10 working days in month M+1 for the month M
07:20 CET	–	–	–	–	–	–	1 day	10 days after the end of month



# PART 2



## FIFTH ENTSOG REPORT ON EFFECT MONITORING OF THE BALANCING NETWORK CODE

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# 2024

COVERS GY 2021/22 AND GY 2022/23

# EFFECT MONITORING OF THE BAL NC

Following Article 8(8) of Regulation (EC) No 715/2009, ENTSOG shall monitor the effects of the Balancing Network Code (BAL NC) on the EU gas wholesale market. Monitoring the effect of the BAL NC implementation is not only a duty for ENTSOG but also a way to analyse how the rules set out in the NC affect the harmonisation of balancing regimes among EU Member States and the benefits that its implementation brings to the market.

This is the **fifth** time ENTSOG analyses the effects of the BAL NC implementation across EU Member States. The first BAL NC Effect Monitoring Report was published in 2016 and covered the effects of the BAL NC after the first implementation deadline of 1 October 2015, assessing the implementation status for Gas Year (GY) 2015/2016. The second BAL NC Effect Monitoring Report 2017 was published in 2018 and analysed the effects of the BAL NC implementation after the second deadline of 1 October 2016. The Third Effect Monitoring Report, published in June 2020, covered the effect of the BAL NC implementation after the deadline of 16 April 2019 for the termination of interim measures<sup>1</sup>. The Fourth Effect Monitoring Report analysed the effects of the BAL NC on EU balancing zones at the end of GY 2020/21 and showed for some indicators the evolution over the four gas years (GY 2017/18–GY 2020/21).

This Effect Monitoring report shows for the first time values of the indicators for the EU as a whole (EU-25 member states without Cyprus and Malta holding derogations). In particular, for selected mature gas markets some indicators are displayed for the last six gas years (starting with GY 2017/18). While it would be of interest to investigate how flow pattern from Russian gas to Europe and cross border gas flow between the EU-25 have changed, this would go beyond the scope of this report. However, you can find the latest developments in this regard on ENTSOG's gas flows dashboard<sup>2</sup>. Also, an investigation on the effects of recent mergers of balancing zones in Bulgaria and Germany would have had its merits. However, it seems unrealistic to draw clear conclusions on the impact of the mergers on balancing activities considering the unusual market environment of the last 2 years.

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<sup>1</sup> Whilst the BAL NC set a deadline to terminate the interim measures, in case of establishment of a balancing platform, Article 47(3) allows the transmission system operators to continue their operation until 2024, upon decision from the National Regulatory Authority.

<sup>2</sup> <https://www.entsog.eu/reco-system>



## 1 TSO PARTICIPATION AND DATA COLLECTION

In order to produce the current report, ENTSOG collected data by means of a questionnaire from 25 TSOs/Market Area Managers (MAMs) operating in the balancing zones as per Annex I.

The Effect Monitoring questionnaire was jointly developed by ENTSOG and ACER, in an attempt

to streamline the data collection and maintain the cooperation between the two organisations. The data collected has been shared with ACER which uses the dataset to perform their own assessment which is further reported in ACER's Balancing Monitoring Report, Market Monitoring Report and Gas Balancing Dashboard.

## 2 ANALYSIS AND RESULTS OF THE EFFECT MONITORING INDICATORS

The data collected have been analysed using five indicators to assess the effects of the BAL NC implementation across EU balancing zones:

- ▲ **Indicator BAL.1:** TSO balancing via STSPs vs. total TSO balancing actions
- ▲ **Indicator BAL.2.1:** TSO balancing volume as % of Market Volume<sup>3</sup>
- ▲ **Indicator BAL.2.2:** TSO balancing volume as % of Domestic Volume
- ▲ **Indicator BAL.3:**<sup>4</sup> Net NUs imbalances as % of Market Volume<sup>5</sup>
- ▲ **Indicator BAL.4:**<sup>6</sup> Average network users' cost of being balanced by the TSO

Indicator BAL.1 aims at assessing the extent to which TSO balancing actions are undertaken following the "merit order" (Art. 9 of BAL NC) and the progressive use of short-term standardised products. Indicator BAL.2.1 and BAL.2.2 analyse the

magnitude of the TSO balancing action in comparison with the market size of each balancing zone. Indicator BAL.3 focuses on the network users' imbalances magnitude compared to the market size (the methodology to calculate the current indicator BAL.3 has been reviewed and slightly adjusted, in order to improve the quality of the analysis and the underlying assumptions<sup>7</sup>), while indicator BAL.4 is used to draw considerations on the price gap between market price and imbalance charges and the additional costs for network users to be imbalanced, also for this indicator the calculation methodology has been reviewed and adjusted (the unweighted average of the daily weighted average price has been replaced with a weighted daily average price based on daily imbalance volumes).

Where relevant, results of indicators for balancing zones in countries that have recently removed the use of interim measures, or still apply interim measures, have been commented separately.

### 2.1 INDICATOR BAL.1: TSO BALANCING VIA STSPs vs. TOTAL TSO BALANCING ACTIONS

The main aim of the BAL NC is to incentivise network users to optimise their gas portfolios efficiently, minimizing the balancing actions undertaken by the TSO. Nevertheless, TSOs may need to take action to keep the transmission network within its operational limits and to manage line pack fluctuations. When meeting its balancing needs, the TSOs should aim at maximising the purchasing

and selling of short-term standardised products (STSPs) on trading platforms.

Operational balancing performed by the TSO should be conducted following a merit order based on which STSPs higher ranked in the merit order (i. e., title products) should be preferred to lower ranked balancing products (i. e., locational, temporal and temporal locational products). In case STSPs do not

3 Market volume means Gas volume subject to balancing

4 Named as Indicator BAL.4 in monitoring reports 2019 and earlier

5 Market volume means Gas volume subject to balancing

6 Named as Indicator BAL.5 in monitoring reports 2019 and earlier

7 Find more information in Chapter 2.4 of this report.

provide the necessary response to keep the system in balance or in situation of illiquid markets, TSOs may procure balancing services or trade on balancing platforms.

The **indicator BAL.1 assesses the extent to which balancing actions by the TSO have been taken using STSPs** – in particular, title products – compared to the overall TSO's balancing actions (including other STSPs, balancing services, interim measures).

**BAL.1: Rate of utilisation (%) of each STSP (BUY+SELL actions volume) vs. total balancing actions (BUY+SELL actions volume)**

$$BAL.1 = \frac{STSPn \text{ (BUY + SELL actions volume)}}{\sum (TSO \text{ BUY + SELL actions volume})} \times 100$$

**Aim:** To verify an increased use of title products over other types of products.

**Granularity:** yearly volume

**Unit of yearly volume<sup>8</sup>:**  $\sum_{d=1}^{365} MWh/d$

It is calculated by dividing the total quantity of gas traded by the TSO for each STSP (exchanged both within-day (WD) and day-ahead (DA)) over the total volume of TSO's balancing actions. Moreover, indicator BAL.1 aims at verifying a progressing increase rate of utilisation of title products over other STSPs for each balancing zone.

### 2.1.1 ANALYSIS OF RESULTS

The data collected for GY 2022/23 show that during the past gas year most TSOs relied on Title products when undertaking balancing actions in their respective balancing zones (see Fig. 1 below).

The analysis of indicator BAL.1 does not include PL-L and PL-TGPS balancing zones, where no balancing action was concluded by the TSOs in GY 2022/23.

Other types of STSPs besides title products (within day and day ahead) have been used in Germany (THE), France (TRF) and in the Netherlands (TTF). In Germany, temporal, locational and/or temporal-locational products may be used if title products are not available, or if the requirements of temporal products demand a shorter lead-in time than is available at the exchange. In the French balancing zone (TRF) the locational product is used when operational limits are likely to be exceeded, which only happened once in GY 2022/23 (product was used by GRTgaz).

In the Dutch balancing zone, temporal products are used when a balancing action is performed when the system is deemed to be outside the safety operational range (i. e., the system balance signal is in the orange or red zones). In these cases, the TSO buys a temporal product with the duration of 1-hour and gas is then taken in/delivered within 1 hour after the balancing action has been taken.

In Slovakia, title products are available at the established balancing platform which is still used as an interim measure due to an illiquid market in this country.

During the GYs 2021/22 and 2022/23 balancing services have been used more or less extensively in 7 balancing zones (DE-THE, FI, GR, LT, LV-EE, PL-H and SI).

▲ In Germany, balancing services have been used on a few days only, accounting for 0.28 % (GY 2021/22) and 0.02 % (GY 2022/23) of the total amount of balancing actions undertaken by the Market Area Manager (MAM). Balancing services were used as an option for delivery/offtake of gas on a "rest of the day basis" within pre-defined network zones, or in case of short-term local supply constraints after exhaustion, or technical unavailability, of the higher merit order ranks. Additionally, other hourly balancing services have been used at the VIP TTF-THE-L (IPs between DE and NL) ("Long Term Option"), or at storage facilities or via demand-side management in pre-defined network zones ("Long Term Option – short call").

▲ In Finland, an extensive use of balancing services has been observed in GY 2022/23 (48.2 %) after 2.1 % in GY 2021/22. Due to stoppage of the flows from Imatra on May 2022 and commissioning of 2 new entry points

<sup>8</sup> For leap years 366 instead of 365.

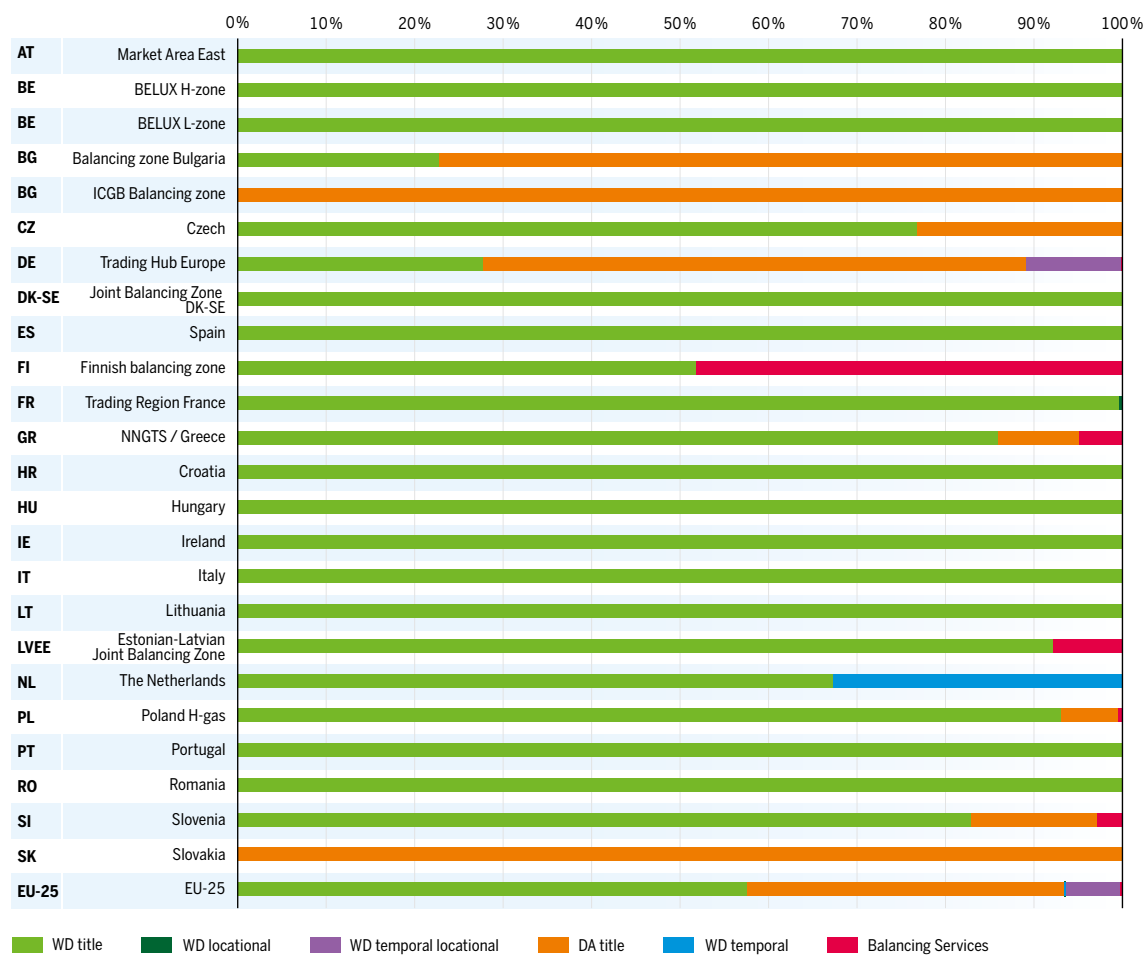


Figure 1: Indicator BAL.1 (%) for GY 2022/23

- (Inkoo LNG entry point and Hamina LNG entry point) at the end of 2022, balancing regime in Finland has fundamentally changed (before 2022 Finland had entry points from Imatra and Balticconnector and the only interconnection point to exit direction was Balticconnector). Due to transitional period in adapting into the new balancing regime and intermittently limited liquidity at the gas exchange, the role of balancing service agreements had been temporarily higher. However, starting from summer 2023, the role of balancing service agreements has been smaller and the role will be even smaller in the future.
- In Greece, balancing services accounted for 3.2 % (GY 2021/22) and 4.9 % (GY 2022/23), as they are still used in Greece in limited cases, when unpredictable shifts in domestic consumption occur (such as demand for power production, which represents more than 50 % of total domestic demand) towards the end of the gas day, and outside of the standard operating session of the trading platform. In these circumstances where TP liquidity is typically low, balancing services can be used.
  - Balancing services share in the Estonian-Latvian balancing zone accounted for 13 % (GY 2021/22) and 7.9 % (GY 2022/23) of total balancing actions and balancing services have been used in situations when STSPs were economically less efficient, with insufficient liquidity or in case locational products were needed.
  - In Lithuania, balancing services accounted for 12.3 % (GY 2021/22) of the total balancing actions. This is due to limited market liquidity with only a few market players active on the wholesale market. The use of balancing services became obsolete when GIPL became operational.
  - In Poland, H-gas balancing zone balancing services have been used every day but the total quantity of gas purchased via balancing services amounts to 0.3 % (GY 2021/22 and to 0.5 % (GY 2022/23) when compared to the total balancing actions volume.

▲ In Slovenia, balancing services accounted for 11.2 % (GY 2021/22) and 3 % (GY 2022/23). Due to the volatile market at the gas hubs and on the Slovenian trading platform, there were situations where the balancing service was more affordable for the transmission system operator and the supply of the product was more reliable to keep the transmission network within its operational limits.

In Italy an additional tool is provided to reconcile the operating differences between nominated and metered gas flows from/to storage facilities, namely Operational Storage (SOP).

Comparing the values of indicator BAL.1 in **countries that have applied and/or are still applying interim measures**<sup>9</sup> (BG, DE, IE, GR, LV, LT, PL, RO and SK), over the last six gas years a progressive decline in use of balancing services can be observed in most balancing zones, the total volume of balancing services accounted only for 0.21 % of TSO balancing actions across all TSOs in GY 2022/23.

Among the countries that had terminated the use of interim measures as of 1 October 2023<sup>10</sup> (Fig.2), in Balancing zone Bulgaria balancing services have been used as an alternative to a balancing platform until the trading platform became operational as of 1 January 2020.

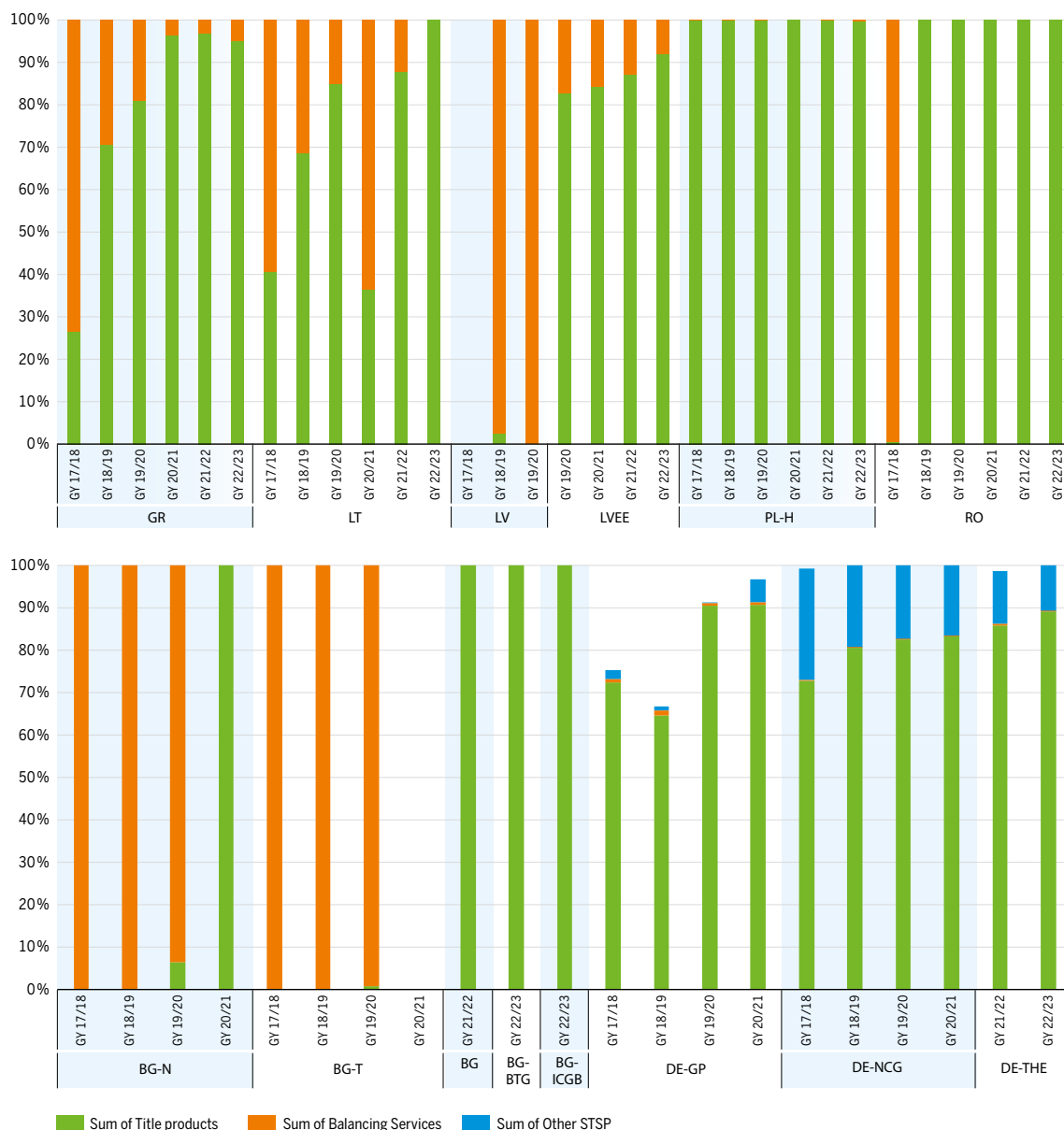


Figure 2: Countries that terminated the use of interim measures before 1 October 2023

9 Sweden has not been considered in this analysis as it is having adopted the Danish balancing model since the establishment of a common balancing zone as of 1 April 2019. For the scope of this report and better comparability of the results, data for Sweden have been considered only in conjunction with Denmark and are represented by the indicators for the Joint Balancing Zone DK-SE

10 Five countries (LT, LV, PL, RO, and SE) completely terminated the use of interim measures by April 2019

On 1 October 2023 the only countries still applying interim measures are IE and SK, however no balancing services have been used during the GYs 2021/22 and 2022/2023, please see also section 2.3.10. of the IM report.

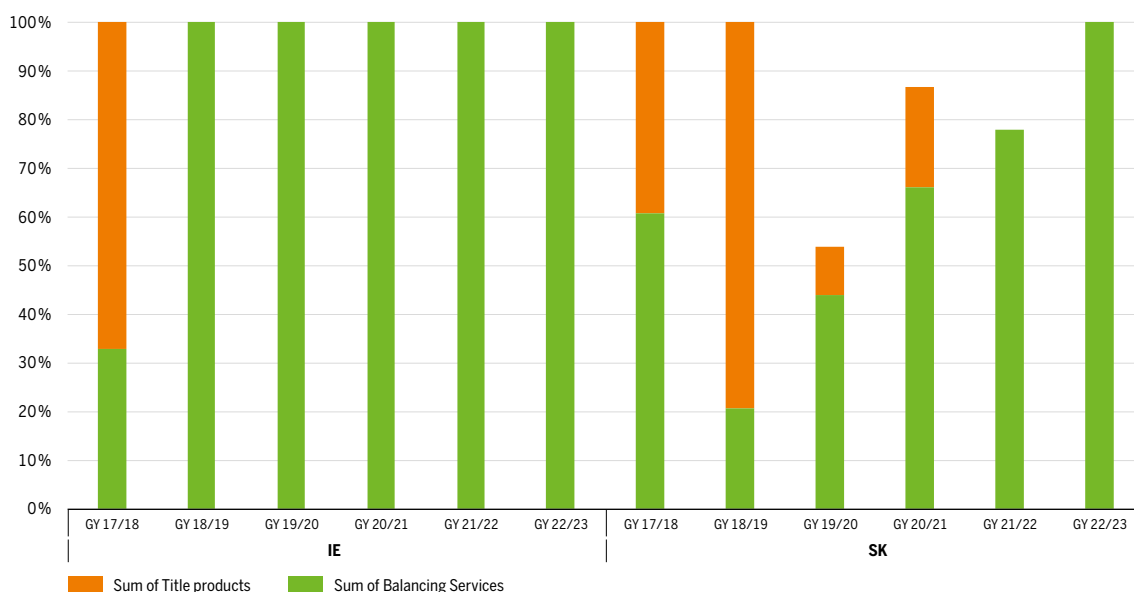


Figure 3: BAL.1 Countries under interim measures on 1 October 2023

#### 2.1.1.1 Trading in adjacent balancing zones

In DE, PL and SK, the NRA has approved the possibility to trade STSPs in adjacent balancing zones.

THE has been registered as network user in the Netherlands and have traded gas at the Virtual Trading Point TTF using the PEGAS trading platform. In addition, THE used the ICE Endex for trading activities.

The Polish TSO had received the approval from the NRA to trade in THE Germany, in Joint Balancing Zone Denmark-Sweden (EEX) and in Lithuania (Get

Baltic) and the Slovak TSO has received approval by the NRA to trade at the Austrian gas hub (CEGH Gas Exchange). However, in GY 2022/23, no trades on the adjacent trading platforms have been made.

The amount of gas traded in adjacent balancing zones has not been displayed in the figures above. Nevertheless, to provide a complete assessment of the TSOs/MAM's balancing action, table 1 below illustrates the % of balancing actions taken in adjacent balancing zone, compared to the total balancing action volume.

Balancing zone	Balancing action undertaken in adjacent balancing zone (MWh/y)	% of Balancing actions taken in adjacent balancing zone vs. total balancing action volume
DE-Trading Hub Europe	37,099	0.1 %
Poland H-gas	0	0 %
Slovakia	0	0 %

Table 1: List of Balancing zones with balancing actions taken in adjacent balancing zones



### 2.1.1.2 TSO's balancing actions volume versus frequency of balancing actions

To complete the assessment of the TSOs role in contributing to keeping the system in balance, the relationship between the total volume of gas bought and sold by the TSOs and the frequency of TSOs action during the year has also been considered. The amount of gas traded by the TSO for balancing purposes, which is further evaluated using indicators BAL.2.1 and BAL.2.2, may not give a sufficient indication of a more or less residual role of the TSO's balancing. On the other hand, more frequent TSOs' balancing action may be explained by specific system needs [(i. e. a correlation between application of Within Day Obligations and more frequent TSO action can be observed in certain balancing zones where WDOs are applied (219 days in balancing zones where TSOs apply WDOs vs. 133 days in balancing zones without WDOs in GY 2022/23)].

Fig. 4 below shows the relation of the total TSOs action volume and the total number of days when balancing actions have been taken in GY 2022/23. Year-on-year comparison of the total number of days when TSOs undertook balancing actions over the last six GYs is presented in Annex IV.

Balancing zones where no balancing actions have been undertaken (PL-L and PL-TGPS) have not been considered in the analysis.

In BE-L and BG-BTG, whilst the total volume of gas traded by the TSO/MAM for balancing purposes is relatively small compared to other balancing zones, it can be observed a more frequent number of days when the TSO/MAM undertake balancing actions. In the case of Belgium L-zone this may be associated with the application of WDOs and the need to take actions within the day to adjust the network users' imbalance position that exceed the WDOs limits. In the Belgian Low-calorific balancing zone, the TSO action volume is higher than in the High-calorific zone, but in both BE-H and BE-L the TSO takes action on a daily basis, which also can be observed in DE-THE and PL-H. In Polish H-zone the number of days when TSO undertakes balancing action is the result of balancing services which are used every day (as the only possibility to balance the small, isolated part of this balancing area).

The more frequent role of TSO action in Greece can be explained by the narrow linepack operational limits compared to the market volume, limited trading platform liquidity after its standard operating session and limited ability of NUs to renominate in pipeline entry points due to commercial agreements.

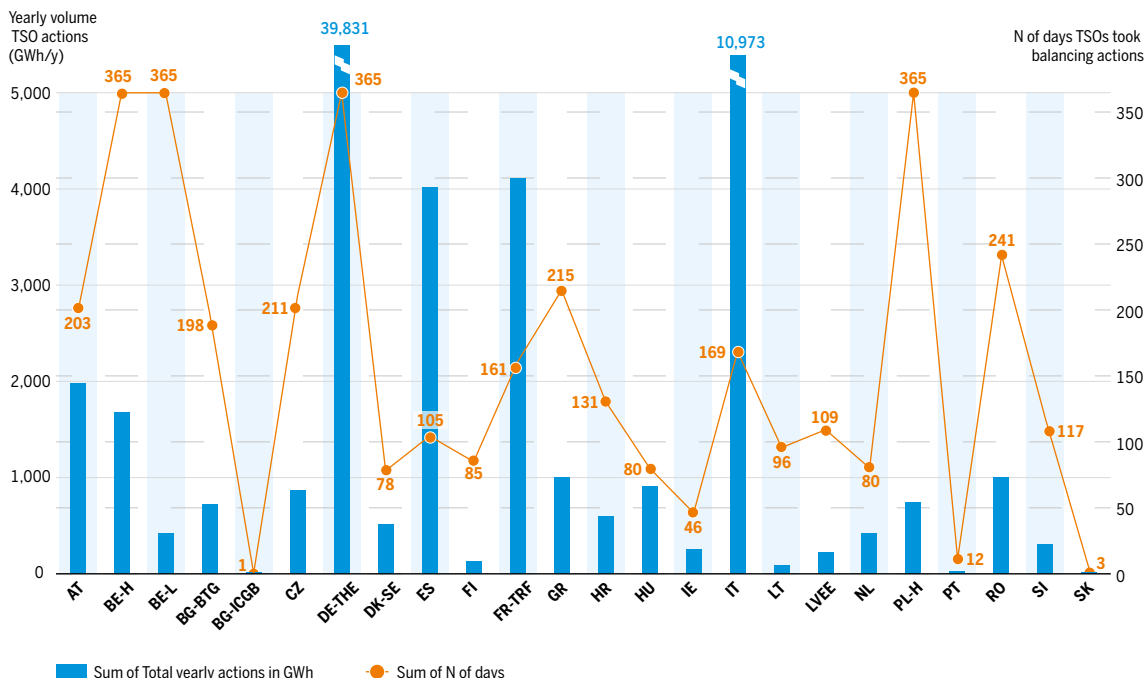


Figure 4: TSOs balancing action volume (GWh/y) vs. N of days when balancing actions are taken in GY 2022/23<sup>11</sup>

11 Graph is out of scale to capture different size of left axis.

In Bulgaria, on the ICGB pipeline only on 1 day a balancing action was required by the TSO. This pipeline is an interconnector with currently one entry and one exit interconnection point and one off-take with a DSO. Further, ICGB has very limited possibility to physically balance the pipeline due to the substantially limited amount of linepack related to the length of the pipeline. Based on those constraints, by decision of the NRAs, ICGB implemented a small adjustment of the WAP of 20 % with the aim to be a strong incentive for network users to stay balanced. This strong incentive was supported by an Operational Balancing Agreement, which never had to be suspended due to technical reasons.

In Slovakia, only on 3 days balancing actions took place. This is partly due to the fact that almost all of the Slovakian interconnection points are subject to the allocation rule “allocated as nominated”. The imbalances at these points can arise only in case of upstream/downstream counterparty curtailments or in case the shipper intentionally nominates different entry and exit volumes, which happened only in few cases. The value of the total volume of gas traded by TSO/MAMs for balancing purpose in DE and IT is higher compared to the other balancing zones due to a bigger size of the respective gas market.

## 2.2 INDICATOR BAL.2.1: TSO BALANCING VOLUME AS % OF MARKET VOLUME<sup>12</sup>

Establishing a residual balancing role for the TSO while leaving the primary balancing responsibility to the network users is one of the key principles of the BAL NC. Therefore, indicator **BAL.2.1 assesses how much gas is traded by the TSO for balancing**

**purposes compared to the Market volume.** The Market volume considers the quantity allocated at all entry points into a balancing zone (e. g., virtual IPs, LNG, production and storages) but excluding VTP trades.

### BAL.2.1: % gas volume traded by the TSO for balancing purposes vs. Market volume

$$\text{BAL 2.1} = \frac{\sum (\text{TSO BUY} + \text{SELL actions volume})}{\text{Yearly Market volume}} \times 100$$

**Aim:** To verify a minimised quantity of gas traded by the TSO compared to the market volume

**Granularity:** yearly volume

**Unit of yearly volume<sup>13</sup>:**  $\sum_{d=1}^{365} MWh/d$

Values of the indicator closer to 0 show a minimised quantity of gas traded by the TSO compared to the market volume, which is the main objective of the gas target model.

<sup>12</sup> Market volume means Gas volumes subject to balancing

<sup>13</sup> For leap years 366 instead of 365.

## 2.2.1 ANALYSIS OF RESULTS

Figure 5 below shows the relation between TSO actions and Market volume for GY 2022/23. As per indicator BAL.1, PL-L and PL-TGPS, where no TSO's

balancing actions have been undertaken have not been considered in the assessment.

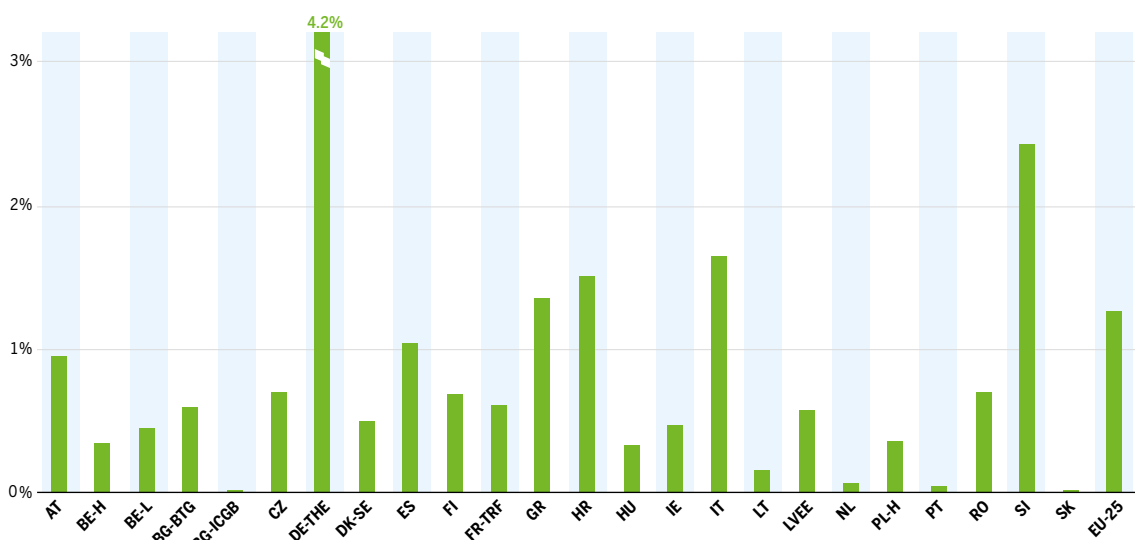


Figure 5: Indicator BAL.2.1 for GY 2022/23

Of the total entry allocations, certain gas quantities are excluded from the application of balancing rules and therefore are not accounted for in the calculation of the imbalance quantity.

For example, in Belgium, quantities allocated as conditional capacity products (OCUC services) and entry quantities associated with direct lines (end-users located in Belgium near the border which are directly connected to the transmission grid of an adjacent TSO or to the grid of a foreign distribution network operator) are not subject to balancing.

In Slovakia, gas volumes contracted before the entry into force of the BAL NC (2015) cannot be subject to current balancing rules.

In PL-L, PL-TGPS and RO, the market volumes include quantities delivered for offsetting operational gas (i. e. self-consumption and losses), but these quantities are excluded from the calculation of imbalances. In Poland H-gas zone, the sum of gas for TSO self-consumption and gas procured through balancing services allocated as entry volume is not subject to balancing.

In such cases, to be more consistent with the intended analysis, the gas entry quantities which are effectively subject to balancing have been considered as proxy for the market volume. Differences between market volume and entry volumes subject to balancing are presented in Annex V.

Results of indicator BAL.2.1 show that DE-THE has the highest level (> 4 %) of balancing actions undertaken by the MAM compared to the total market entry volume, together with SI (> 2 %). In Germany, this may be due to the need for the MAM to undertake frequent within-day actions due to systematic imbalances occurring at specific locations, i. e. smaller linepack available in the low-calorific gas grid area compared to the high-calorific area. The use of Variant 2 information model for non-daily metered (NDM) offtake points which required the MAM to balance any difference between day-ahead forecast of NDM off-takes and within-day allocations significantly impacts this indicator.

The reason for a higher level of indicator BAL.2.1 for Slovenia can be attributed to the relatively small size of the Slovenian gas market, which makes it less likely for network users to effectively balance their portfolio. Due to imbalanced position of the gas market the TSO consequently needs to take more balancing actions to keep transmission system optimised.

In Greece, higher level of indicator BAL.2.1 can be attributed to the more frequent need for the TSO to take actions to keep the system in balance due to the narrow linepack operational limits compared to the market volume, limited trading platform liquidity after its standard operating session and limited ability of NUs to renominate in pipeline entry points due to commercial agreements.

IT, HR and GR also present a value of the indicator slightly higher than other balancing zones (1.64 %, 1.51 % and 1.36 % respectively).

In all other balancing zones, the value of indicator BAL.2.1 remains at or below 1 %, which means that the volume of TSOs/MAM's balancing action is relatively very small compared to the total market

volume. While Austria remained below 1 %, one can observe a comparatively significant increase from almost 0 % to just below 1 %. The reasons for it can be seen in two points: on the one hand the revision of the balancing regime caused a change in the volumes of TSO (MAM) balancing actions, while on the other hand the market volume in absolute numbers decreased.

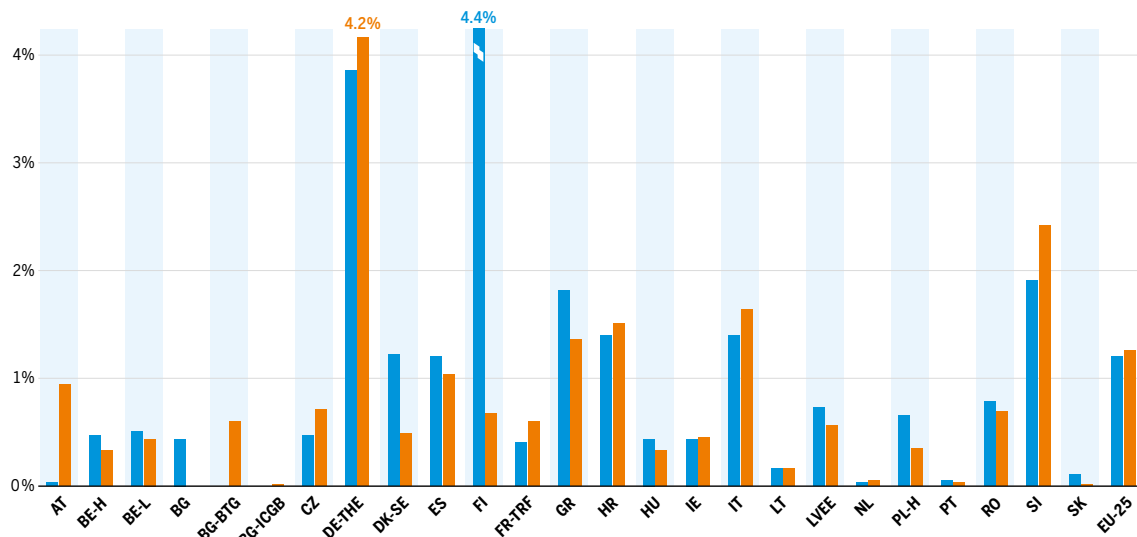


Figure 6: YoY comparison BAL.2.1 (GY 2021/22 vs. GY 2022/23)

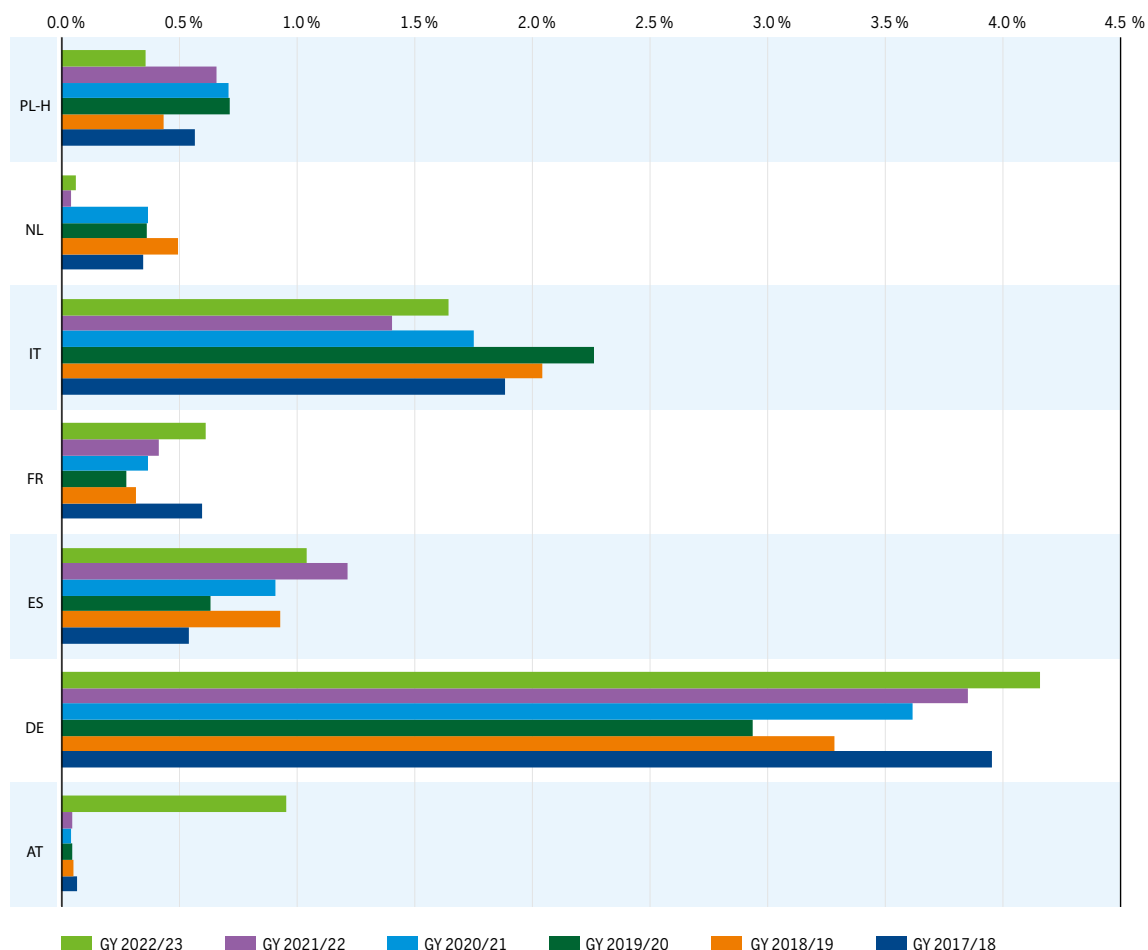


Figure 7: Indicator BAL.2.1 for GY 2017/18 to GY 2022/23 for selected mature markets



Picture courtesy of Gassco

Comparing the level of TSO's balancing actions in GY 2022/23 with GY 2021/22 (Figure 6), it can be noted that in 9 balancing zones (AT, CZ, DE-THE, FR-TRF, HR, IE, IT, NL and SI) there has been an increase in the TSO/MAM's action volume in % from the market volume from the previous gas year. A decreasing trend can be observed in BE-H, BE-L, DK-SE, ES, FI, GR, HU, LT, LV-EE, PL-H, PT, RO and SK.

In the Joint Balancing Zone DK-SE the market volume in GY 2022/23 more than doubled compared to the previous GY. This is due to the start of the Baltic Pipe to Poland that was opened 1 October 2022.

In Figure 7 we show the evolution of BAL.2.1 over 6 GYs for selected mature markets. For FR and DE which started originally with two balancing zones for the pre-merger time a simple consolidation was done by adapting the market volume for flows between the intra-French and intra-German inter-connection points in order to make data relatively well comparable.

Looking at the development of this indicator one cannot see a general trend across the observed markets.

In Austria, there are more balancing activities due to the revision of the balancing regime, please also see above.

Indeed, in France the increase in GY 2022/23 does not reflect a change in trend. The network experienced atypical major imbalances in December 2022, linked to specific market conditions that have never been seen again. Apart from this period, the level of TSO's balancing actions remained very similar to the previous GY.

In Germany, the increase in trend is related to the fact that the market volume has strongly decreased in both GY 2020/21 and GY 2022/23 compared to the GY before due to the steep decline of quantities supplied from Russia. This thwarts the improvements made with regard to reducing the number of necessary balancing actions by the MAM.

In Italy, no significant changes were noticed in the period considered, starting from 2020/2021 the value of the indicator BAL.2.1 has always been below 2 %.

For the Dutch market area, the share of balancing volumes compared to market volumes has decreased. This is partly due to larger price differences between the neutral gas price and the prices determined during balancing actions in gas years 2021/22 and 2022/23 compared to previous years. These price differences and price volatility arose after the outbreak of the war in Ukraine. This gave network users a price incentive to better balancing behaviour.

In addition, GTS has had intensive consultations with network users about undesirable balancing behaviour. In the Netherlands, the NRA's decision on undesirable balancing behaviour gives concrete details on how to minimise the need for balancing actions by the TSO. Even though the code change came into effect on January 1, 2024, it is possible that shippers have adjusted their balancing behaviour well before this date.

In Poland, H-gas the level of balancing actions undertaken by the TSO over the last 6 GYs is always below 0.75 %.



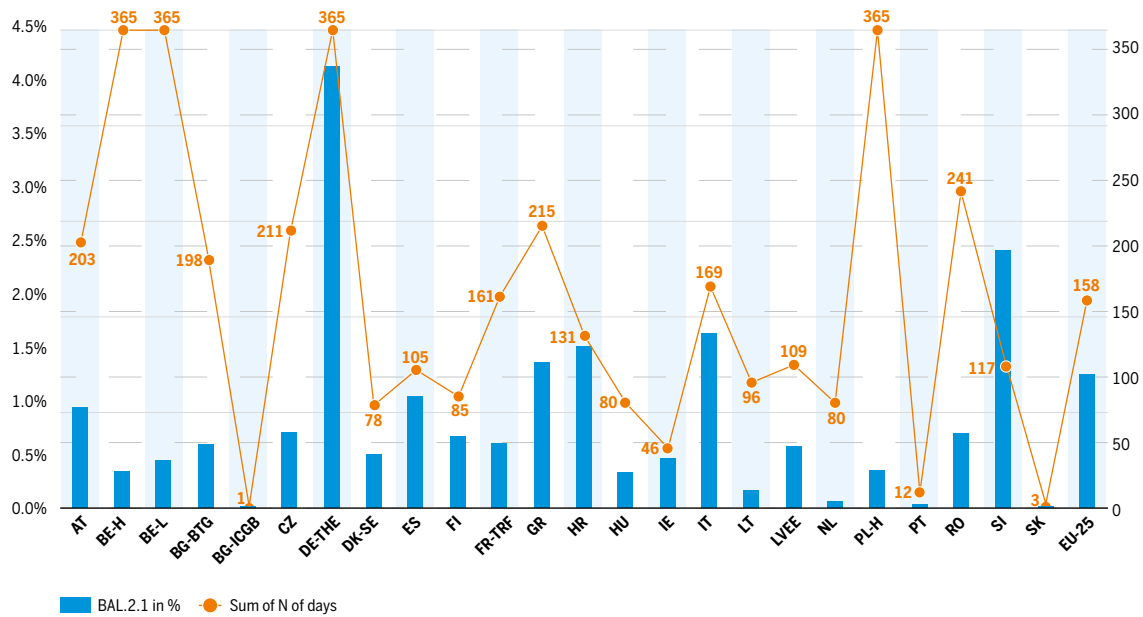


Figure 8: Indicator BAL.2.1 in % vs. N of days when balancing actions are taken

In Spain, the volume of balancing actions has remained similar to the previous year, so there is no change on users' behaviour, however the decrease of the demand affects this indicator.

While in Figure 4 absolute values of gas volumes procured by TSOs/MAMs for balancing actions have been set into perspective to the frequency of balancing actions, in Figure 8 the absolute values have been replaced with the share of balancing actions provided by TSOs/MAMs on the gas volumes subject to balancing in the respective balancing zone.

## 2.3 INDICATOR BAL.2.2: TSO BALANCING VOLUME AS % OF DOMESTIC VOLUME

In order to better compare the balancing zones by removing the effect of the cross-border flows and exits towards storage facilities, the indicator **BAL.2.2 is calculated by replacing the total market volume with the domestic end-user's consumption volume**. The domestic consumption considers the quantity of gas allocated at all exit points to final customers connected at the transmission network and exits towards DSO networks/

city gate and therefore excludes exits to storage and cross-border exits.

The domestic volume is considered representative of the actual demand for end-users trading gas within each balancing zone. Therefore, is deemed to give a more precise assessment of the more or less marginal role of the TSOs undertaking balancing actions within its respective balancing zone.

### BAL.2.2: % gas volume traded by the TSO for balancing purposes vs. Domestic volume

$$\text{BAL 2.2} = \frac{\sum (\text{TSO BUY} + \text{SELL actions volume})}{\text{Yearly Domestic volume}} \times 100$$

**Aim:** Proxy for actual balancing need of each balancing zone.

**Granularity:** yearly volume

**Unit of yearly volume<sup>14</sup>:**  $\sum_{d=1}^{365} \text{MWh}/d$

<sup>14</sup> For leap years 366 instead of 365.

### 2.3.1 ANALYSIS OF RESULTS

When comparing results of the two indicators, it is evident how the impact of cross-border flows is predominant in specific balancing zones, such as AT, BE-L, BG-BTG, DK-SE, HR, LVEE and SI, where the difference is larger than 1 percentage point.

Slovakia is also a country where domestic end-user consumption volume is notably low compared to the total market entry volume. However, such difference is offset by the removal of transmission volume corresponding to the contracts concluded before the BAL NC entered into force from the total market volume used to calculate indicator BAL.2.1 (see chapter 2.2.1).

In the Joint Balancing Zone DK-SE the difference between BAL.2.1 and BAL.2.2 is mainly due to the

transit volumes coming from the Baltic Pipe which commenced operations in October 2022.

In Lithuania, indicator BAL.2.2 shows a much higher value compared to indicator BAL.2.1 as the market volume includes also flows towards adjacent transmission systems.

The difference between indicator BAL.2.1 and BAL.2.2 is also due to the inclusion of volumes related to entries from storage facilities into the transmission network, which is part of the market volume. This is the case in HR and RO.

Annex VI provides a detailed comparison of the market entry volume versus the domestic end-user's consumption volume, calculated based on data for GY 2022/23.

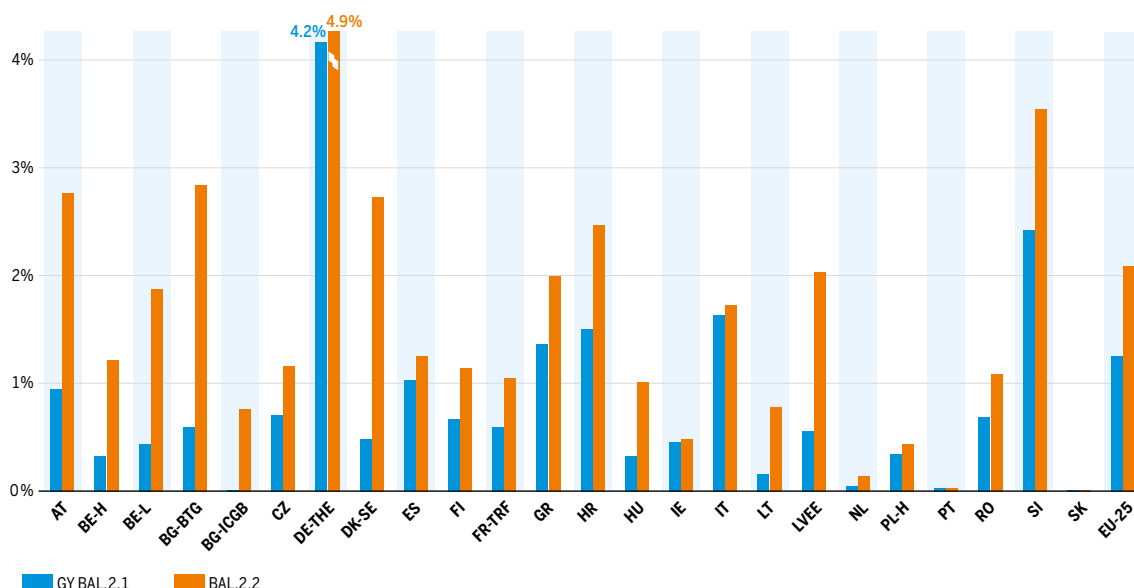


Figure 9: Indicator BAL.2.1 versus BAL.2.2 for GY 2022/23

With exception of AT, BG-BTG, DE-THE, DK-SE, GR, HR, LVEE and SI, the other balancing zones have a ratio of TSO/MAM's balancing action over domestic end-users' consumption volume below 2 %. This means that the number of balancing zones with the BAL.2.2 over 2 % doubled compared to the previous Effect Monitoring report when looking at data for GY 2019/20 and GY 2020/21<sup>15</sup>.

In Figure 10 we show the evolution of BAL.2.2 over 6 GYs for selected mature markets. For both France and Germany, the value for domestic consumption for pre-merger periods has been derived by adding the values of both balancing zones.

In general, one can observe the trend of diminishing values over the last 6 GYs. This picture seems to allow the interpretation, that at least in mature markets the incentives for network users to balance their transportation portfolios have worked. In Austria one could see a falling trend on a very low level until GY 2021/22, with the revision of the balancing regime a comparatively huge increase of TSO balancing activities can be observed. At the same time the market volume decreased and caused a higher result in total (something we have seen across the whole EU). It remains to be seen if in the future we will get a falling trend again.

<sup>15</sup> See chapter 2.3.1 of the [ENTSOG BAL NC Effect Monitoring Report 2022](#).

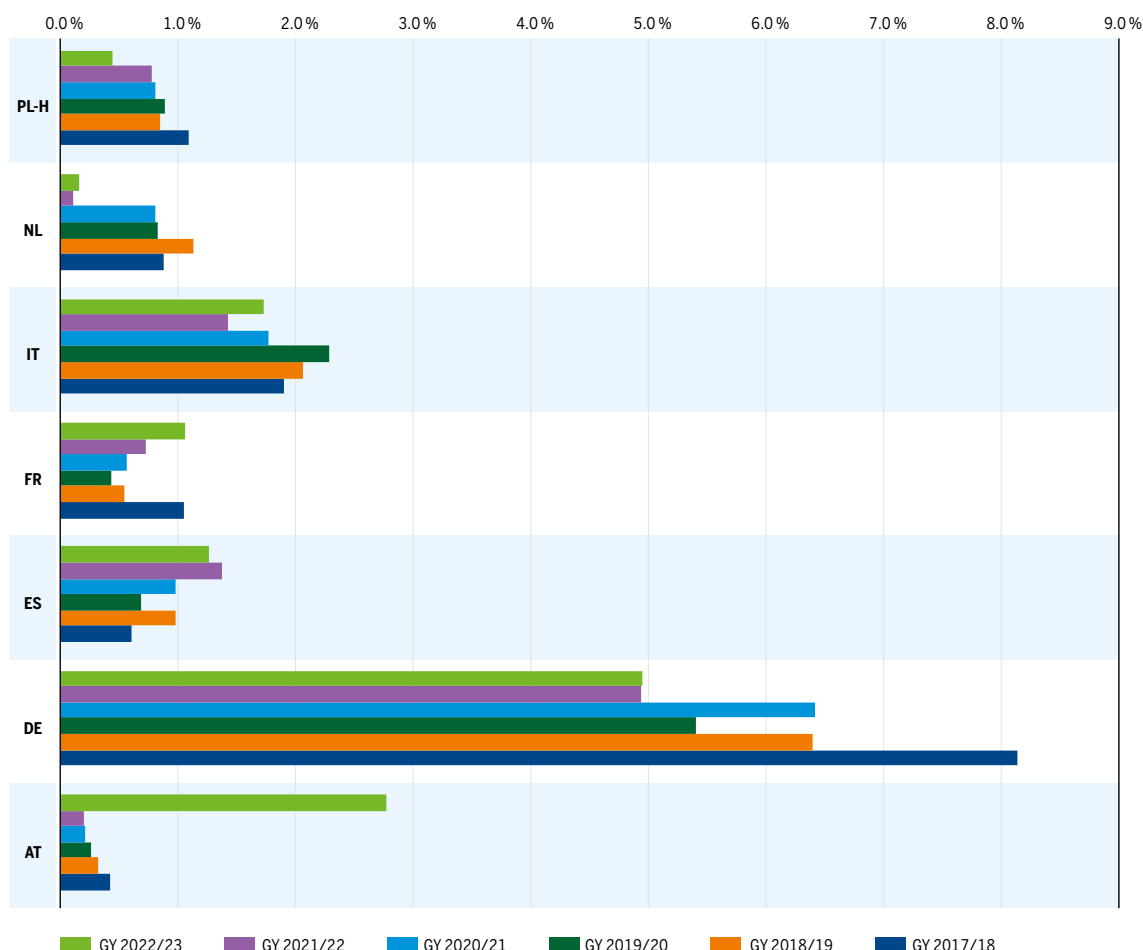


Figure 10: Indicator BAL.2.2 for GY 2017/18 to GY 2022/23 for selected mature markets

## 2.4 BAL.3: NET NETWORK USERS' IMBALANCES AS % OF MARKET VOLUME

The **indicator BAL.3** assesses whether on average during the year network users contribute sufficiently to keeping the system in balance. This is done by calculating the sum of the **weighted average daily net imbalance volume over the yearly market volume** (as defined in indicator BAL.2.1).

Since the previous report, the methodology to calculate the indicator has been adjusted. Instead

of using the sum of daily net network users' imbalances, a weighted daily net network users' imbalance has been calculated, to better reflect the actual volume of gas entering the system on a daily basis. In the cases when tolerances and Linepack Flexibility Service (LFS) are applied, the net network users' imbalances also consider the tolerated imbalance volume and the imbalances covered by the LFS (both Short and Long).

### BAL.3: Net Network Users' imbalance volume as a share of Market volume<sup>16</sup> (%)

$$BAL\ 3 = \frac{\sum ((\text{daily NUs imbalances LONG} - \text{daily NUs imbalances SHORT}) \times \text{daily Market volume} / \text{Ø daily Market volume})}{\sum \text{daily Market volume}} \times 100$$

**Aim:** net imbalance volume of network users should be minimised

**Granularity:** yearly volume **Unit of daily volume:** MWh/d

**Unit of yearly volume<sup>17</sup>:**  $\sum_{d=1}^{365} MWh/d$

<sup>16</sup> Market volume means Gas volumes subject to balancing

<sup>17</sup> For leap years 366 instead of 365.

2.4.1 ANALYSIS OF RESULTS

Figure 11 below shows the results of indicator BAL.3 for GY 2022/23.

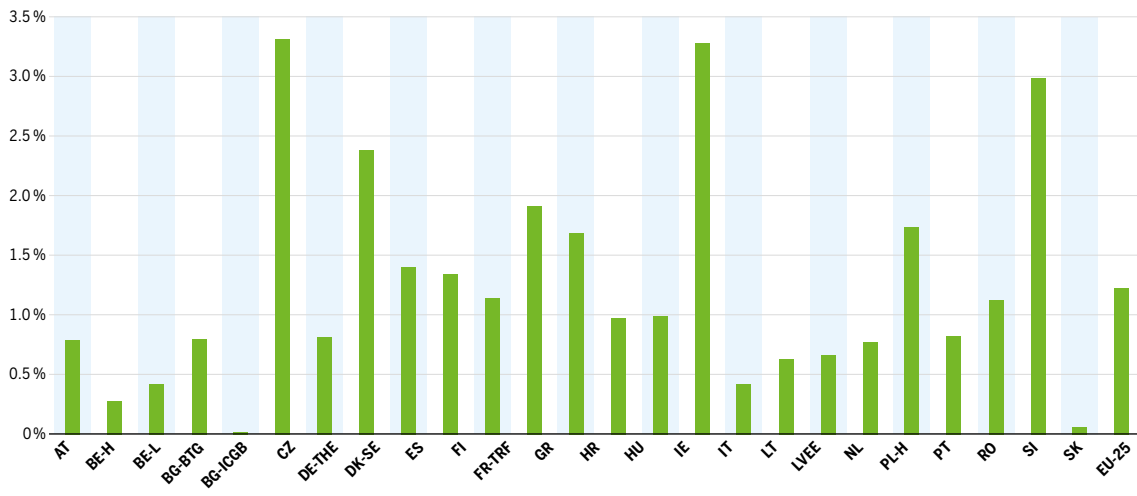


Figure 11: Indicator BAL.3 for GY 2022/23

In most balancing zones, with exception for DK-SE, CZ, IT and SI, indicator BAL.3 shows that on average during the year, the residual imbalance level is less than 2 % of the total market volume.

In the Joint Balancing zone DK-SE, it is noted that due to the commencement of operations of the Baltic Pipe, the level of BAL.3 decrease significantly (from > 6 % to 2.4 %). However, it must be noted further that due to IT errors occurring in relation to the commencement of the Baltic Pipe, daily net imbalance volumes have been higher.

In Italy, the low value of the small adjustments could be responsible for the high value of indicator BAL.3

In Slovenia, the level of imbalances is higher due to significantly lower volumes of cross-border flows as a result of changes in geopolitical conditions and their impact on the gas flow routes.

No imbalances have occurred in PL-TGPS balancing zone, please see also section 2.2.1.

The level of imbalances in Slovakia is extremely low compared to the market volume (0.06 %), due to the significant volume of cross-border flows. Moreover, almost all of the Slovakian interconnection points are subject to the allocation rule “allocated as nominated. The imbalances at these points can arise only in case of upstream/downstream counterparty curtailments or in case the shipper nominates different entry and exit volume.

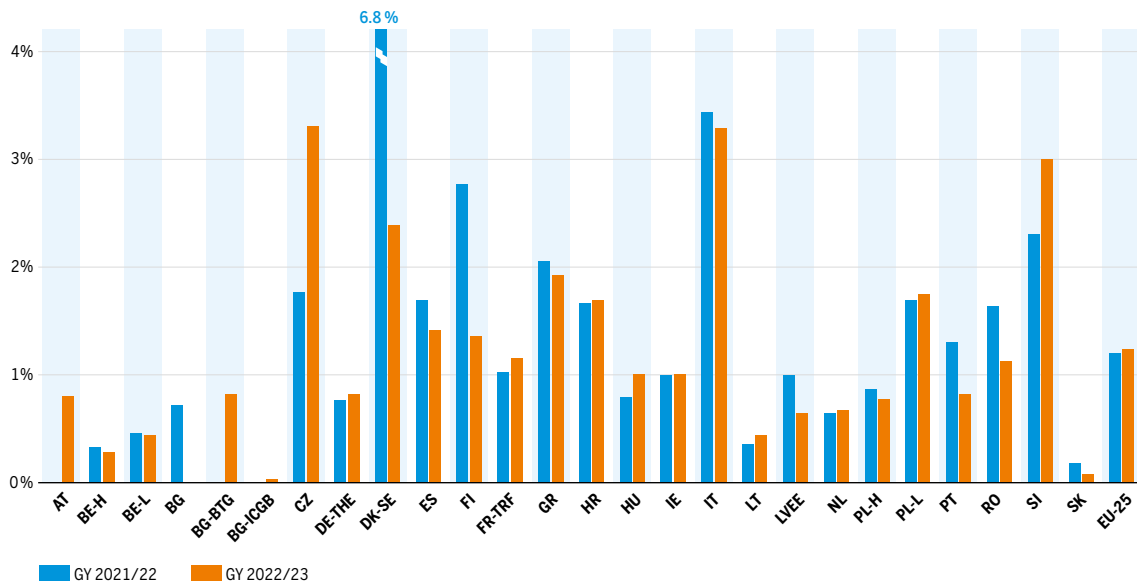


Figure 12: BAL.3 GY 2021/22 versus GY 2022/23

Even lower (0.02 %) is the level of imbalances in the Interconnector Greece Bulgaria (ICGB), please see explanation in section 2.1.1. Comparing the results of the indicator BAL.3 for GY 2022/23 with GY 2021/22, a decrease in the level of imbalances YoY can be observed in about half of the balancing zones under assessment (BE-H, BE-L, DK-SE, ES, FI, GR, IT, LVEE, PL-H, PT, RO and SK). Conversely, a more significant increase of residual imbalances level is observed in CZ and SI, while in the other balancing zones with increasing residual imbalances the level remained below 2 % in GY 2022/23.

In GY 2021/22 the indicator BAL.3 has not been calculated for Austria – Market Area East. In Austria, the MAM is responsible for keeping the system in balance by buying or selling gas on the behalf of each Balancing Group Responsible (BGR), if certain preconditions are fulfilled. These preconditions were in GY 2021/22 fulfilled if the amount of a balance group imbalance was higher than

24 MWh, regardless of whether the BGR was long or short. The MAM did not balance long volumes against short volumes between balance groups, so all MAM's balancing actions were triggered by BGR imbalances. As these preconditions were changed with the revision of the balancing regime, a comparison between the two reporting years does not make sense for Austria. Of course, the BAL.3 from GY 2022/23 can be used for comparisons in the future.

Comparing the level of network users' imbalances to the previous report, indicator BAL.3 shows less favourable values. In most markets distortions due to the invasion in Ukraine seems to have it made harder for network users to balance their portfolios themselves especially in GY 2021/22 where higher imbalance volumes met lower market volumes which compounded the negative impact on indicator BAL.3.



Picture courtesy of GAZ-SYSTEM



## 2.5 BAL.4: AVERAGE NETWORK USERS' COST OF BEING BALANCED BY THE TSO

This indicator was introduced for the first time in the Second BAL NC Effect Monitoring Report<sup>18</sup> 2017. Indicator **BAL.4 (previously named BAL.5) is used to assess the average marginal cost borne by the network users for being imbalanced.** The methodology to calculate indicator BAL.4 used in the Third and Fourth Effect Monitoring Reports has been adjusted by replacing the average daily

Weighted Average Price (WAP) with a weighted average daily WAP (based on network users imbalance volumes LONG and SHORT accordingly for the 2 indicators on LONG and SHORT positions in order to base the calculation of the indicators on the same volume). The aim is to indicate the marginal cost for network users of being balanced by the TSO.

### BAL.4: % Daily Average imbalance prices applied by the TSO vs. average daily Weighted Average Price (WAP)

$$\text{BAL 4 (Long NUs)} = \left( \left( \frac{\text{Average Daily Sell price}}{\text{Average Daily WAP (based on NUs Long positions)}} \right) - 1 \right) \times 100$$

$$\text{BAL 4 (Short NUs)} = \left( \left( \frac{\text{Average Daily Buy price}}{\text{Average Daily WAP (based on NUs Short positions)}} \right) - 1 \right) \times 100$$

Where:

#### Daily Sell price is calculated as follows:

$$\frac{((\text{Daily Imbalances LONG} \times \text{daily Marginal SELL price}) + (\text{Daily Imbalances LONG within tolerances} \times \text{daily WAP}) + (\text{Daily Imbalances LONG within LFS} \times \text{daily LFS SELL price}))}{((\text{Daily Imbalances LONG}) + (\text{Daily Imbalances LONG within tolerances}) + (\text{Daily Imbalances LONG within LFS}))}$$

#### Daily Buy price is calculated as follows:

$$\frac{((\text{Daily Imbalances SHORT} \times \text{daily Marginal BUY price}) + (\text{Daily Imbalances SHORT within tolerances} \times \text{daily WAP}) + (\text{Daily Imbalances SHORT within LFS} \times \text{daily LFS BUY price}))}{((\text{Daily Imbalances SHORT}) + (\text{Daily Imbalances SHORT within tolerances}) + (\text{Daily Imbalances SHORT within LFS}))}$$

#### Average Daily WAP (based on NUs Long positions) is calculated as follows:

$$\frac{\sum_{d=1}^{365} (\text{Daily WAP} \times ((\text{Daily Imbalances LONG}) + (\text{Daily Imbalances LONG with tolerances}) + (\text{Daily Imbalances LONG with LFS})))}{((\text{Annual Imbalances LONG}) + (\text{Annual Imbalances LONG with tolerances}) + (\text{Annual Imbalances LONG with LFS}))}$$

#### Average Daily WAP (based on NUs Short positions) is calculated as follows:

$$\frac{\sum_{d=1}^{365} (\text{Daily WAP} \times ((\text{Daily Imbalances SHORT}) + (\text{Daily Imbalances SHORT with tolerances}) + (\text{Daily Imbalances SHORT with LFS})))}{((\text{Annual Imbalances SHORT}) + (\text{Annual Imbalances SHORT with tolerances}) + (\text{Annual Imbalances SHORT with LFS}))}$$

**Aim:** indicate the marginal cost for network users of being balanced by the TSO.

**Granularity:** yearly **Unit of Daily Buy/Sell prices:** EUR/MWh

In case tolerances are applicable to a particular balancing regime, the average Daily Sell price, and the Average Daily Buy price, are calculated by taking into account the price applied to the imbalance quantities within the tolerance (normally corresponding to the daily WAP) and the price applied to the imbalance quantities in excess of the tolerance

(marginal BUY/SELL prices). In circumstances where LFS is offered by the TSO, the prices of the LFS have also been considered for the calculation<sup>19</sup>. In countries offering LFS it can be observed that the usage of LFS has a positive impact for the network user in terms of average cost paid per imbalanced MWh of gas.

<sup>18</sup> **ENTSOG BAL NC Effect Monitoring Report 2017**

<sup>19</sup> A LFS is offered in Czechia, France, Hungary, the Netherlands and Portugal, in Czechia the LFS was even offered free of charge in GY 2021/22 and GY 2022/23, according to the national balancing rules.



Considering the specificities of each balancing regime and the different underlying determination of the imbalance charges in each balancing zone, the analysis of indicator BAL.4 is not intended to provide a price comparison between balancing

zones, but to give a general overview of the ratio between average daily buy/sell price and average daily WAP (daily weighted based on network users imbalance quantities) in each balancing zone.

### 2.5.1 ANALYSIS OF THE RESULTS

Figure 13 below represents the results of indicator BAL.4 based on data for GY 2022/23.

No data on daily marginal prices were available for the Netherlands<sup>20</sup>. The analysis does not include Poland-TGPS, where no imbalances have occurred.

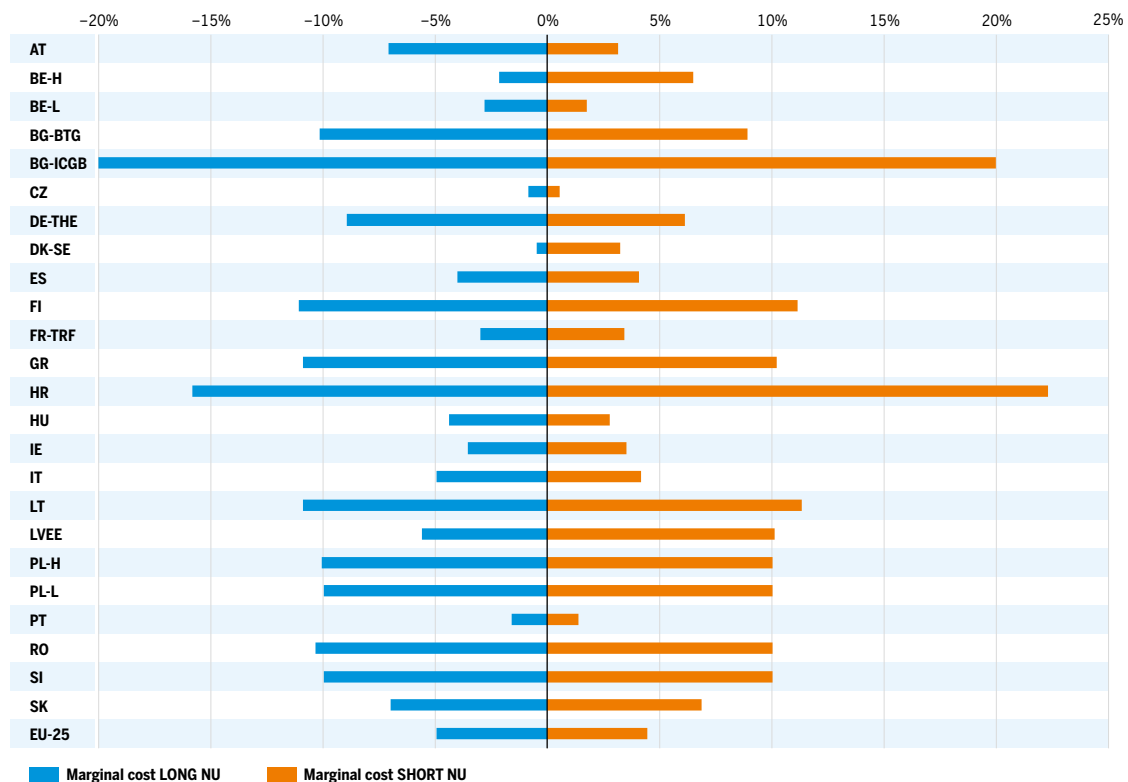


Figure 13: BAL.4 GY 2022/23

All countries but Slovakia have implemented daily imbalance charges, according to Art. 19–23 of the BAL NC, where an interim imbalance charge is applied (according to Art. 49). Imbalance charges in the Slovak balancing zone are calculated based on the prices derived from balancing platform trades.

In Croatia, it is noted that the deviation of the average daily buy prices from the daily WAP was higher than the deviation of the daily sell imbalance price (22 % of the average WAP). Overall, BAL.4 for Croatia shows the highest level of deviation from the WAP for the average buy and the second highest after ICGB (where a prohibitively high small adjustment of 20 % has been implemented, see also table 2 below) on the sell prices. During times (parts of June and July 2023) of extremely low values for the

WAP due to a constant surplus of gas on the market the marginal prices were set significantly outside the range of the small adjustments.

In Ireland, a 25 % tolerance still exist for specific entry points for renewable gas

Only in Bulgaria in the ICGB Balancing zone, Poland H- & L-gas and Slovenia, the deviation of the average buy and sell prices from the WAP corresponds to the level of the applied small adjustment (see table 2 on the following page).

In general, it seems that the geopolitical situation influenced the BAL.4 negatively, which means that for network users the balancing out of imbalances during GY 2022/23 became at least relatively more expensive compared to GY 2020/21.

<sup>20</sup> Details on methodology to determine the daily imbalance charges can be found in Annex II of this report.

Balancing Zone	Level of the applied small adjustment on 1 October 2023
Austria – Market Area East	3 %
BeLux-H gas	SA causer = 3 %,
BeLux-L gas	SA helper = 0 % <sup>21</sup>
Balancing zone Bulgaria	8 %
ICGB Balancing zone	20 %
Croatia	10 %
Czechia	from 2 % up to 5 % of WAP, depending on the value of the aggregate imbalance <sup>22</sup>
Trading Hub Europe	2 %
Greece (NNGTS)	10 %
Finnish Balancing Zone	10 %
Trading Region France (TRF)	2.5 %
Hungary	3 %
Ireland	Adjustment calculated according to applicable rules <sup>23</sup> based on market liquidity
Italy	0.108 €/MWh
Joint Balancing Zone DK-SE	between 8 % and 10 % <sup>24</sup>
Estonian-Latvian Joint Balancing Zone	marginal sell price (MSP) incentive factor value – 0.95. marginal buy price (MBP) incentive factor value – 1.10.
Lithuania	10 %
High-methan gas Balancing Zone (H-Gas)	10 %
Low methan Balancing Zone (L-Gas)	
Transit Gas Pipeline System (TGPS)	
Portugal	2.5 %
Romanian National Transmission System (NTS)	10 %
Slovakia	7 %
Slovenia	10 %
Spain	3 %

Table 2: Small adjustment levels on 1 October 2023

### 3 CONCLUSIONS

After analysing the effects of the BAL NC based on the 5 indicators considered, the following conclusions can be drawn:

Indicator BAL.1 continuously shows an increased use of Short Term Standardised Products as a tool for TSOs to undertake balancing actions and a progressive reduction of balancing services to only 0.21 % in GY 2022/23, particularly in Germany after the merger and in Portugal (no use at all) the use of balancing services has been reduced significantly.

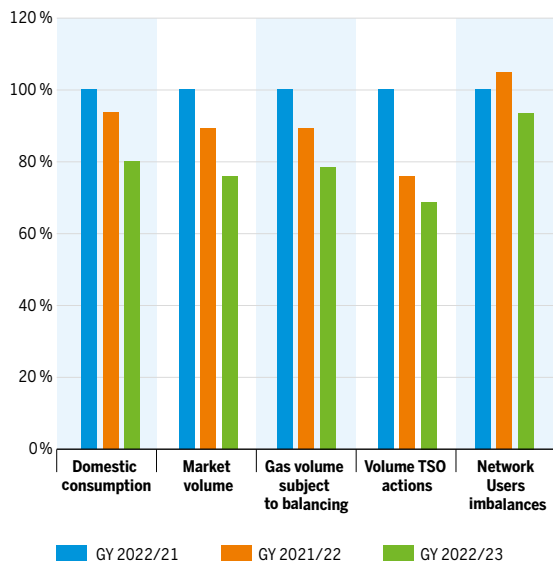
In the majority of the balancing zones the volume of TSO/MAMs balancing action volumes decreased compared to the previous reporting periods. Indicator BAL.2.1 shows that the level of TSO/MAM's balancing action volume remains below 1 % for most balancing zones, signaling that the percentage of TSOs/MAM's balancing action is overall relatively small compared to the total gas volume entering each balancing zone. Few exceptions where the level of indicator BAL.2.1 is higher than 1 % are observed in Germany (4.16 %), Slovenia (2.42 %), Italy (1.64 %), Croatia (1.51 %), Greece (1.36 %) and Spain (1.04 %).

21 Causer means that the network user's imbalance is in the same direction (excess or shortfall) as the global market position. Helper means that the network user's balancing position goes in the opposite direction as the one of the global market position.

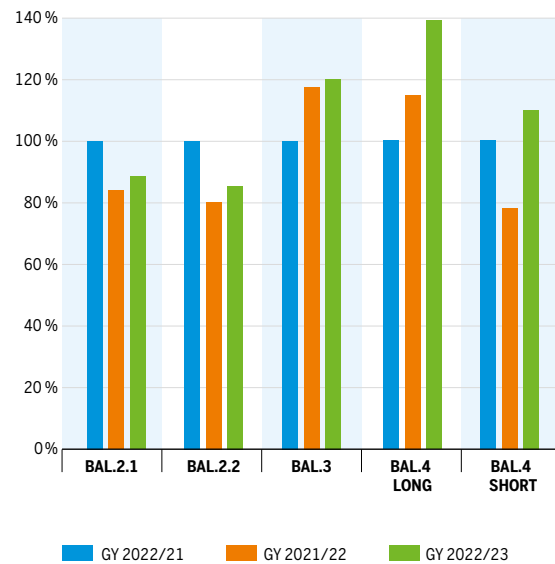
22 The higher the aggregate imbalance the higher the price adjustment.

23 [Link](#) to the approved daily imbalance charge calculation methodology (Art. 20.2) in PART-E of Version 5.04 on page 11.

24 The percentage is calculated based on alternative costs at storage and interconnection points and takes into account the gas price.



**Figure 14:** Development of EU-25 Market and TSO data from GY 2020/21 to GY 2022/23



**Figure 15:** Development of EU-25 BAL indicators from GY 2020/21 to GY 2022/23

In some balancing zones cross-border flows have an impact on the overall gas quantities entering the market, which is more evident when comparing the TSO/MAM balancing action volume with the domestic end-user's consumption (BAL.2.2). In most balancing zones the value of this indicator remains below 2.5 % with a few exceptions in Germany (4.95 %), Slovenia (3.54 %), Balancing zone Bulgaria (2.83 %), Austria (2.77 %) and the Joint Balancing zone Denmark and Sweden (2.73 %).

- Assessing the level of network users' imbalances, indicator BAL.3 shows less favourable values compared to the previous report. In most markets distortions due to the invasion in Ukraine seems to have it made harder for network users to balance their portfolios themselves especially in GY 2021/22 where higher imbalance volumes met lower market volumes which compounded the negative impact on indicator BAL.3. However, in most balancing zones, the residual imbalance level still was equal or less than 2 % of the total market volume, with the exception of the Joint Balancing zone DK-SE (6.84 % for GY 2021/22 and 2.38 % for GY 2022/23), Italy (3.43 % and 3.28 %), Finland (2.77 % and 1.34 %), Slovenia (2.30 % and 2.99 %), Greece (2.05 % and 1.91 %) and the Czechia (1.75 % and 3.31 %).

- From Indicator BAL.4, it is noted that in only 4 compared to 9 balancing zones in the previous report (BG-ICGB, PL-H, PL-L, and SK ) the average marginal cost for network users to be imbalanced corresponds to the level of the small adjustment which is applied to determine the daily imbalance charges. Also, this indicator seems to be negatively impacted by the geopolitical situation. Some cases of higher deviance are noted in Croatia and Germany with more than 5 percentage points above the small adjustments. While there are only 5 countries offer LFS, it can be observed that the usage of LFS has a positive impact for the network user in terms of average cost paid per imbalanced MWh of gas. All countries but Slovakia have implemented daily imbalance charges, according to Art. 19–23 of the BAL NC, where an interim imbalance charge is applied.

- Domestic consumption across Europe fell in GY2022/23 by some 20 % compared to GY 2020/21 (see Figure 14). This eventually was driven by high energy prices on the one hand and by European policy on the other hand (save gas for a safe winter regulation from 2022 which aimed at a reduction of 15 % on energy consumption). Market volume and gas volume subject to balancing decreased even further.

Figure 15 gives an overview of the BAL indicators on a European level and are a consequence of the development of the data displayed in Figure 14.

## ANNEX IV: TOTAL NUMBER OF DAYS WHEN TSOs UNDERTOOK BALANCING ACTIONS

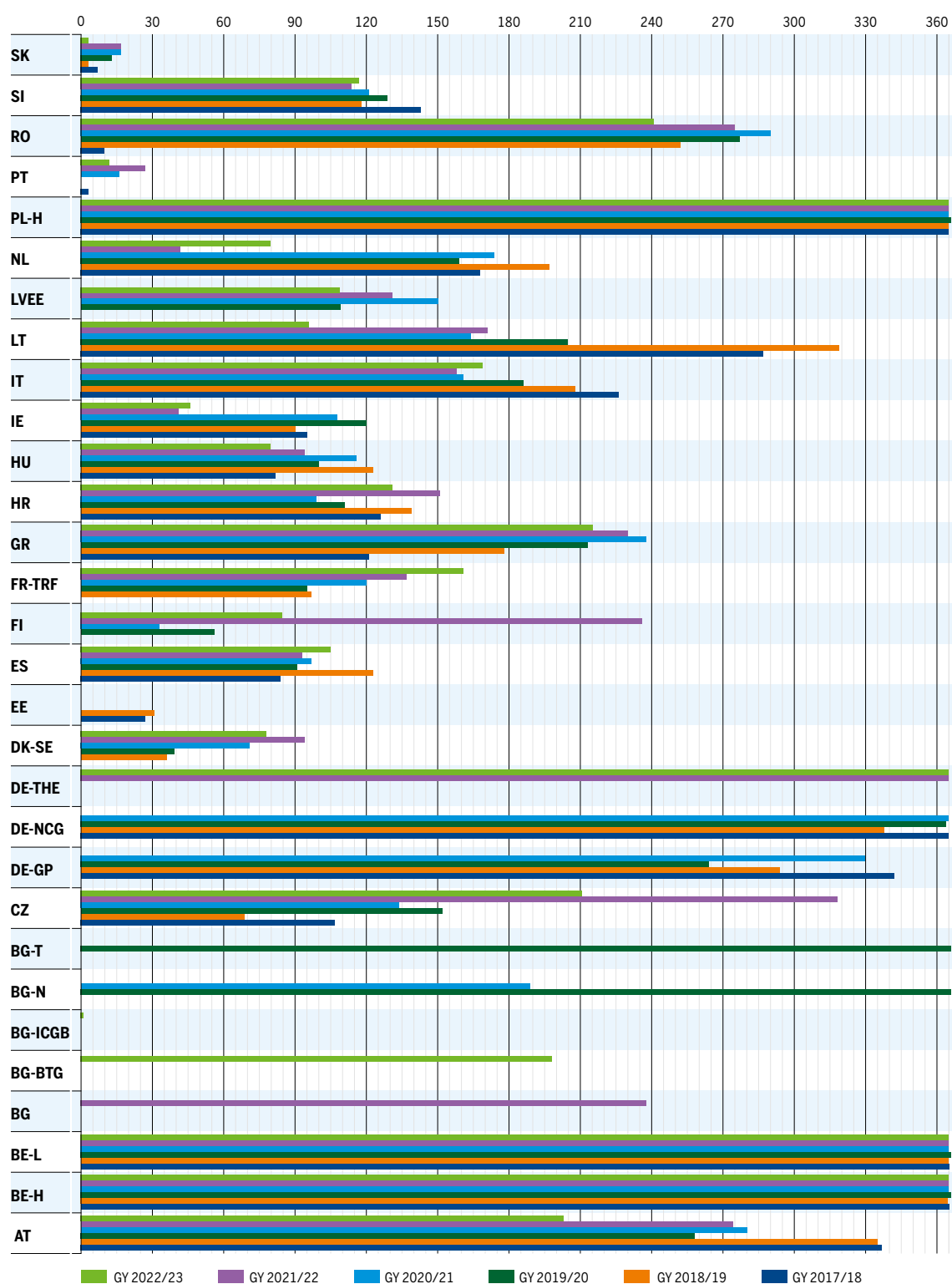
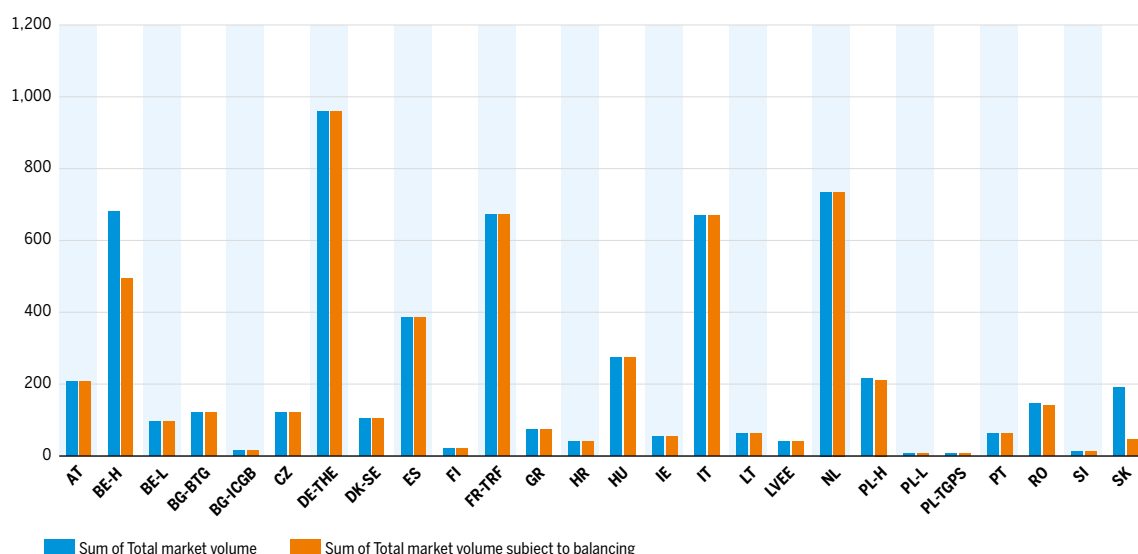


Figure 16: N of days when TSOs undertook balancing actions (GY 2017/18 – GY 2022/23) YoY comparison<sup>25</sup>

No balancing actions have been reported in Poland L-gas and TGPS balancing zones over the six GYs.

<sup>25</sup> For leap years total number of days is 366 instead of 365.

# ANNEX V: YEARLY MARKET VOLUME VERSUS YEARLY MARKET ENTRY VOLUME SUBJECT TO BALANCING



**Figure 17:** Yearly market volume versus Yearly market entry volume subject to balancing (TWh/y) (GY 2022/23)

In most balancing zones, all gas volumes entering the system are subject to balancing (i. e. is accounted for the determination of the daily imbalance quantity and associated daily imbalance charges of network users).

In Belgium, quantities allocated as conditional capacity products (OCUC services) and entry quantities associated with direct lines (end-users located in Belgium near the border which are directly connected to the transmission grid of an adjacent TSO or to the grid of a foreign distribution network operator) are not subject to balancing. The volume corresponding to these gas quantities has a higher impact on Belgium H-gas balancing zone than Belgium L-gas.

In Slovakia, gas volumes contracted before the entry into force of the BAL NC (2015) cannot be subject to current balancing rules, therefore these quantities are not subject to balancing.

In PL-L, PL-TGPS and RO the market volumes include quantities for offsetting operational gas (i. e. self-consumption and losses) but these quantities are excluded from the calculation of imbalances. In Poland H-gas zone the sum of gas for TSO self-consumption and gas procured through balancing services allocated as entry volume is not subject to balancing. However, the above-mentioned quantities do not represent a significant portion of the overall market volume, as it can be observed in Figure 17.

## ANNEX VI: MARKET VOLUME VERSUS DOMESTIC END-USERS CONSUMPTION

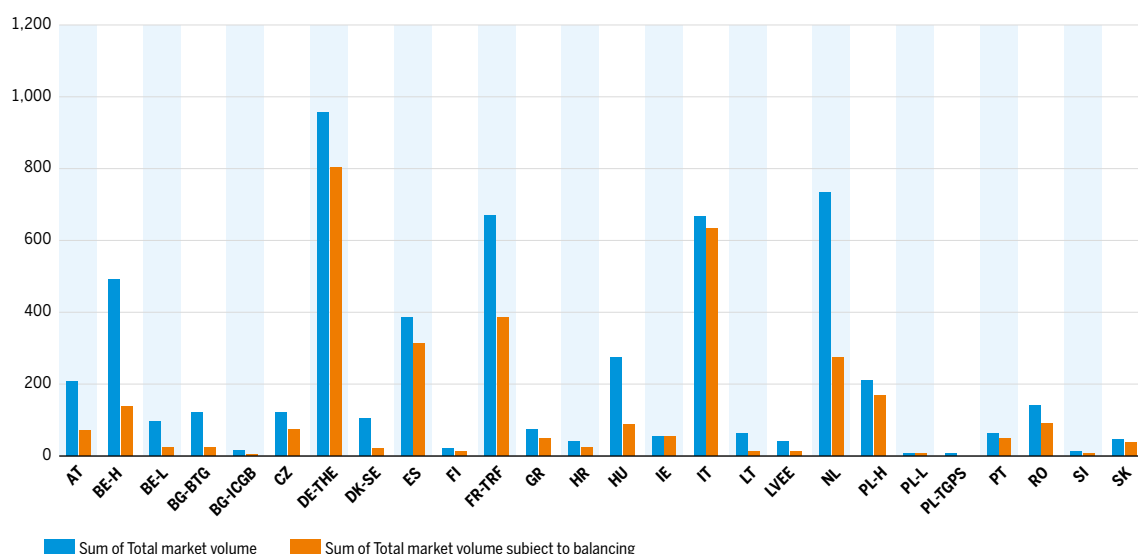


Figure 18: Market volume versus Domestic end-users' consumption (TWh/y) for GY 2022/23

In AT, BE-H, BE-L, CZ, DE-THE, FR-TRF, HU, NL, and SK, the spread between Market volume and domestic-end user consumption volume is mainly due to cross-border flows.

For the BE-H zone and PL-H zone, the exceeding volume besides the cross-border flows is due to the exclusion of exit volume towards storage. For BE-L zone, the difference between market volume and domestic volume besides transit flows is dependent from the inclusion of backhaul flows towards NL and volumes related to the "Quality Conversion Services", to convert gas quality from L-gas into H-gas.

In Lithuania, the market volume includes also transmission to adjacent transmission systems.

In PL, the TGPS balancing zone does not connect domestic end-users.

In other balancing zones, the difference between market volume and domestic consumption volume is related to the exclusion of exit volume towards storages from the domestic end-user's consumption, a characteristic of how the effect monitoring questionnaire was defined.



## ANNEX VII: DAILY WEIGHTED AVERAGE PRICE ON TRADING PLATFORMS IN SELECTED BALANCING ZONES

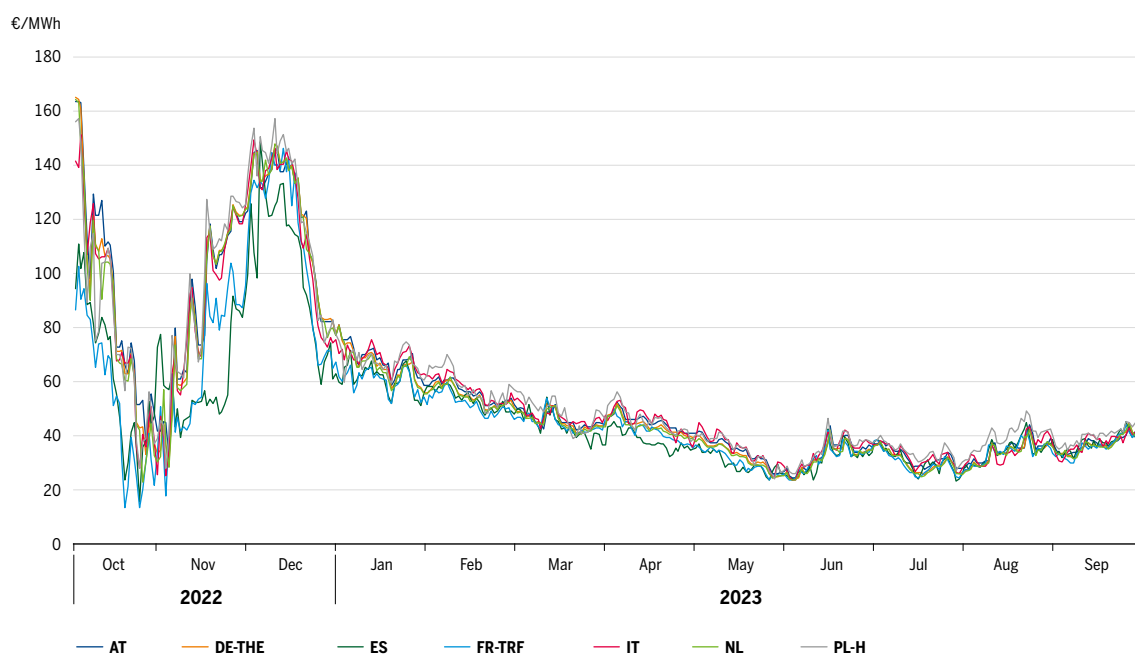


Figure 19: Daily WAP on trading platforms in selected balancing zones (EUR/MWh) (GY 2022/23)

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