



BALANCING NETWORK CODE

Implementation and Effect Monitoring Report 2022

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PART 1



FIFTH ENTSOG MONITORING REPORT ON IMPLEMENTATION OF THE BALANCING NETWORK CODE

2022

COVERS GY 2019/20 AND GY 2020/21



EXECUTIVE SUMMARY

According to Article 8(8) of the Regulation (EC) 715/2009 ENTSOG "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 fifth time ENTSOG monitors the implementation of the BAL NC and the fourth time that it evaluates its effects.

This report reflects the status of the BAL NC implementation at 1 October 2021, covering the most recent updates implemented during Gas Years 2019/20 and 2020/21, while it assesses the effect of the BAL NC comparing data from Gas Year 2017/18 until Gas Year 2020/21 (when possible). In order to perform the monitoring analysis, information was collected by means of questionnaires from TSOs and other entities with balancing responsibility¹ in the EU and the UK².

The results of the BAL NC Monitoring report will be published in the ENTSOG Annual Report 2021.

The **Implementation Monitoring Report** shows that progress has been made towards the full

implementation of BAL NC provisions in comparison to the previous monitoring report.

Compared to the previous Implementation Monitoring Report (referencing at 1 October 2019), Bulgaria (BG) terminated the use of **interim measures**. Interim measures are still in place in Ireland (IE), Greece (GR), Slovakia (SK) and Northern Ireland (UK-NI). The main reason indicated by these countries to implement interim measures is because of the absence of sufficient liquidity in the short-term wholesale gas market. In Ireland (IE), existing tolerances are needed to support the development of renewable gas injection. The interim measures that remain in place in GR, SK and UK-NI are planned to be removed as soon as well functioning Trading

¹ Market Area Manager in Germany, Austria, Belgium, and Enagás in its role of Technical System Manager in Spain

² UK TSOs are no longer members of ENTSOG as of 1 January 2022. However, a cooperation agreement is in place between ENTSOG and UK TSOs, therefore UK TSOs participated to the data collection on a voluntary basis. Two separate balancing zones exist in Great Britain and Northern Ireland, therefore these two areas are considered as separate countries for the purpose of this report.



Platforms are established and market liquidity is developed. In Finland (FI) the BAL NC was implemented as of 1 January 2020.

At 1 October 2021, trading platforms have been established in almost all balancing zones, with exception of GR, SK and UK-NI. In Portugal (PT) the trading platform was established in March 2021, but the new rules enabling the TSO to perform balancing actions using STSPs entered into force as of 1 October 2021. In GR a trading platform will be established during 2022. A balancing platform is in place in GR and SK, while in UK-NI the TSO relies solely on balancing services to undertake balancing actions. Balancing services are still procured in 9 countries (Germany (DE), in both NCG and GP balancing zones, GR, Lithuania (LT), in Poland (PL) in the H-gas balancing zone, PT, Slovenia (SI), SK, Great Britain (UK-GB)³ and UN-NI) 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.

TSOs operating in 3 balancing zones (Finnish, Latvian-Estonian and Slovenian balancing zones) have reported some updates in relation to the application of **nomination and renomination rules** at points other than IPs.

Daily imbalance charges, according to Art. 19–23 of the BAL NC, have been implemented by TSOs in all countries except Greece (GR), Slovakia (SK) and

UK-Northern Ireland (UK-NI), where interim imbalance charges apply.

Bulgaria (BG) terminated the use of interim imbalance charges in January 2020, following the establishment of the trading platform.

Within Day Obligations (WDOs) are in place in Austria (AT), Belgium(BE) – in both BeLux-H and BeLux-L balancing zones – DE and the NL. In Denmark and Sweden (Joint balancing zone DK/ SE) and Hungary WDOs will be introduced as of 1 April 2022.

In almost all countries **neutrality provisions** have been implemented as per BAL NC, except for Austria (AT), Greece (GR) and Lithuania (LT), where neutrality charges are still under implementation, and in Denmark (applying to the overall Joint Balancing Zone DK/SE), where there is no separate balancing neutrality charge. TSOs from 8 countries (France (FR), Hungary (HU), Italy (IT), Netherlands (NL), Poland (PL), Romania (RO), Spain (ES), UK-Great Britain (UK-GB) have reported that cases of default payment by network users occurred within GY 2019/20–2020/21. In all cases, the relevant credit risk measures were activated. However, for some TSOs the episode resulted in non-recoverable losses.

At 1 October 2021, almost all the countries had implemented the **information provisions** of BAL NC, with the exception of Greece (GR) and Romania

3 No balancing action was undertaken via balancing services in SI and UK-GB in GY 2020/21 based on the EM analysis.

(RO), where implementation of non-daily metered provisions is still ongoing.

Compared to the previous Implementation Monitoring Report, Czech Republic (CZ), France (FR), Netherlands (NL) and Portugal (PT) remained the only countries where a **Linepack Flexibility Service** (LFS) was offered at 1 October 2021. In PT, new rules for the offer of a LFS entered into force as of 1 October 2021.

TSOs in 11 countries (AT, BG, FI, HU, IE, IT, NL, PT, RO, ES, SI, UK-NI) have reported **updates to the national balancing rules**. Further changes in the national balancing rules have been reported as under implementation in 9 countries (AT, DK/SE (Joint balancing zone), GR, LT, PT, SK, UK-GB and UK-NI). 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 throughout year 2020 and 2021 and future balancing zone mergers are under consideration. Finland, Estonia and Latvia created a single entry tariff system, with an Estonia-Latvia balancing zone as of 1 January 2020. In Finland, discussion is ongoing on establishing a common balancing zone with Baltic States (Estonia, Latvia and Lithuania). A decision on this regard has not yet been made and currently the TSOs in Finnish-Baltic region are looking for a solution for 4-country common tariff zone (currently Finland, Estonia and Latvia form a 3-country common tariff zone) which would allow to eliminate transmission cost between Lithuania, Latvia, Estonia and Finland.

In BG, the National and Transit balancing zones became effective as of 1 October 2021, while the two German gas market hubs Gaspool (GPL) and Net Connect Germany (NCG) have been merged as of 1 October 2021 in the Trading Hub Europe (THE) joint market area.

The **Effect Monitoring Report** focusses on the effects of the BAL NC on EU balancing zones at the end of GY 2020/21 (until the reference date of 1 October 2021), based on five indicators. For some indicators, the evolution over the last four gas years (GY 2017/18 – GY 2020/21) has also been assessed.

Based on the results of **indicator BAL.1**, it is observed an increased use of Short Term Standardised Products as tool for TSOs to undertake balancing actions and a progressive reduction of balancing services particularly in balancing zones that terminated the use of interim measures since the last monitoring report.

Indicators BAL.2.1 and BAL.2.2 show that the level of TSO/MAM's balancing action volume remains below 1% for most balancing zones, signalling that that the percentage of TSOs/MAM's balancing action is overall relatively small compared to the total gas volume entering each balancing zone (BAL.2.1).

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 (BAL.2.2).

The analysis of the level of net network users' imbalances over the total market volume via **indicator BAL.3** shows that in most balancing zones the net network users' imbalance level was equal or less than 2 % of the total market volume. Moreover, when comparing the level of net network users' residual imbalance volume with the net TSO/MAM balancing actions volume, a correlation between net Nus imbalances and counteractive TSO/MAM net action can be noted for most balancing zones.

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 certain balancing zones 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. In other balancing zones the deviation of the average buy and sell prices from the daily market price varies between 1 % and 16 % and -1 % and -24 % for buy and sell prices respectively. Since the indicator is calculated based on data for GY 2020/21, it takes account of the increase in prices observed in Q3 of 2021. However, it does not take account of the further increase in prices observed in the current GY (i.e., GY 2021/22) because this is outside the period covered by this report.



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 that no interim measures were applied. The BAL NC allowed the TSOs to apply interim measures according to Articles 45-50 in the absence of sufficient liquidity of the short-term wholesale market and upon approval by the NRA. Article 45(4) set April 2019 as the deadline for the termination of interim measures⁴.

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 Directive⁵.

Cyprus holds derogations according to Article 49(1), (2), (6) of the Gas Directive 73/2009 as long as they remain isolated and emergent market without a gas transmission system;

- Malta continues to hold a derogation according Article 49(6) of the Gas Directive 73/2009 since the future network of the prospective TSO Interconnect Malta is not yet commissioned;
- Luxembourg still holds a derogation according to Article 49(6) of the Gas Directive 73/2009, which derogates it from Article 9 on unbundling of transmission systems. 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 have been provided via the Belgian TSO (Fluxys).

In this Report ENTSOG continues to monitor the implementation and the effects of the BAL NC at the date of 1 October 2021, in accordance with Article 8 (8) of Regulation (EC) No 715/2009⁶. The results of this Report will be published in the ENTSOG Annual Report 2021.

⁴ 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.

⁵ 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.

⁶ 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).



IMPLEMENTATION MONITORING OF THE BAL NC

1 TSO PARTICIPATION AND DATA COLLECTION

This is the fifth 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 Balancing Network Code after its entrance into force on 1 October 2015. The second BAL NC Implementation Monitoring Report was published in 2017 and aimed at monitoring the status of BAL NC implementation in the EU by 1 October 2016. The Third BAL NC Implementation Monitoring Report was published in 2017 and covered the status of its implementation by 1 October 2017. The fourth BAL NC Implementation Monitoring Report was published in 2020 and assessed the implementation of the BAL NC by 1 October 2019⁷.

This Implementation Monitoring report covers the status of the BAL NC implementation at 1 October 2021 and the changes in the balancing regime implemented among EU and UK TSOs during Gas Years 2019/2020 and 2020/2021.

The report evaluates the BAL NC implementation status in 29 balancing zones in 27 countries⁸ (AT, BE, BG, CZ, DE, DK, EE, ES, FI, FR, GR, HU, HR, IE, IT, LU⁹, LT, LV, NL, PL, PT, SE, SI, SK, RO, UK-GB and UK-NI¹⁰).

Cyprus does not have TSOs, 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 73/2009 and the future network of the prospective TSO Interconnect Malta is not yet commissioned. It is therefore not included in this report.

The BAL NC may also apply to interconnectors. For completeness of the monitoring activity, three interconnectors have been contacted: BBLC, Interconnector (former IUK) and TAP. Due to the specific nature of interconnectors, Interconnector and BBLC implemented the BAL network code on an "in = out" principle, whereby a network user's nominations input must equal its offtake nominations. 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. TAP has been granted by the European Commission an exemption from the

⁷ ENTSOG BAL NC Implementation and Effect Monitoring Report 2015, 2016, 2017, 2019.

⁸ The term "country" refers to member countries of the EU and UK.

⁹ Data for Luxembourg have been incorporated in the questionnaire submitted by the Belgian TSO (Fluxys) as Belgium and Luxembourg have the same balancing regime and belong to the same balancing zone.

¹⁰ UK-GB and UK-NI are counted separately as different TSOs operate in the two different balancing zones and the two areas are regulated by different NRAs. Whilst UK is no longer part of EU as of 1 January 2021, data available for UK-GB and UK-NI until 1 October 2021 have been considered in this report for completeness.

requirements on third party access, tariff regulation and ownership unbundling laid down in Articles 9, 32, 41(6), 41(8) and 41(10) of Directive 2009/73/ EC¹¹, subject to the terms of the Final Joint Opinion of the Energy Regulators of Italy, Greece and Albania dated 6 June 2013 (FJO). As per TAP's FJO, section 4.7, TAP's Network Code which comprises the operational rules of TAP, including its balancing model, has been approved by the Italian, Greek and Albanian National Regulatory Authorities in June 2020. 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 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.

Map 1 shows the existing balancing zones in EU at the date of 1 October 2021.



***** BBL is part of the TTF market area. The Netherlands and BBL have established a joint entry/exit system, but with two difference balancing regimes.

Map 1: Overview of Balancing Zones and respective VTPs in EU at 1 October 2021

¹¹ Brussels, 16.5.2013 C(2013) 2949 final and Final Joint Opinion

2 EVALUATION OF RESPONSES TO QUESTIONNAIRE

For 9 countries (AT¹², BE¹³, DE¹⁴, DK, FR, HU, NL, SI, UK-GB) the BAL NC was applicable as from 1 October 2015 and for 5 countries (CZ, ES, IT, HR, PT¹⁵) from 1 October 2016 as approved by the relevant National Regulatory Authority (NRA). The remaining countries (BG, GR, IE, LT, LV, PL, RO, SE, SK and UK-NI) had applied for interim measures. As reported in the past Implementation Monitoring Report, 5 countries (LT, LV, PL, RO, and SE) terminated the use of interim measures by April 2019¹⁶. 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.

At 1 October 2021, 4 countries (GR, IE, SK and UK-NI) still apply interim measures. 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. Map 2 shows the implementation status of the BAL NC for each balancing zone reported at 1 October 2021.



Map 2: Implementation status of the BAL NC in EU MSs at 1 October 2021

16 Whilst Germany is not included in the list, a balancing platform was implemented as interim measure until 1 January 2018.

¹² Whilst implementation of balancing framework started in 2015, not all provisions of the BAL NC were fully implemented according to the EU NC. In order to comply with EU rules, Austria started a process of redesign of the national balancing framework, which will be effective as of 1 October 2022.

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

¹⁴ The BAL NC was applicable in Germany already in 2015, however a balancing platform was used until 1 January 2018.

¹⁵ Whilst Portugal did not apply for interim measures, the BAL NC has not yet been fully implemented.



2.1 MAIN UPDATES COMPARED TO PREVIOUS REPORT

Some TSOs have reported updates to the balancing regime that have been implemented before the 1 October 2021 and/or have indicated future updates to be implemented after 1 October 2021.

In **Bulgaria** a trading platform was operational as of 1 January 2020. Moreover, a public consultation was held on August 2021 to set the parameters valid for GY 2021/22 to be used for the daily Imbalance and neutrality charge calculation methodology. The consultation proposed keeping the small adjustment applied to determine the applicable prices (value amounts to 8 %), keeping the clearing period for the neutrality account for balancing (6 months) and setting the criteria for determining the price of natural gas for balancing according art 25 of the Balancing Methodology. These rules are applicable as of 1 October 2021¹⁷.

Finland opened its gas market on 1 January 2020 with the start of operation of Balticonnector.

Hungary implemented Variant 1 information model to determine non-daily metered off-takes implemented after 1 Oct 2019.

In **Ireland** most all tolerances have been removed as of 1 October 2020 except a 25 % Tolerance at Renewable Natural Gas (RNG) entry points. This tolerance remains to assist the development of a nascent gas source which has received financial support by the government (Cush biomethane entry point). The Regulator will review the tolerance level applied 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.

In **Italy**, the NRA has approved some changes in the allocation procedure at redelivery points towards distribution networks (city gates) for non-daily metered (NDM) final customers, and settlement procedures related to the differences between gas volumes actually delivered (final allocation) to the distribution system in the gas day D and the initial allocations provided to the network users. These changes are effective as of 1 January 2020.

In **the Netherlands**, additional provisions for the implementation of neutrality arrangements to prevent possible undesirable balancing behaviour are being discussed between the Dutch TSO and the NRA.

In **Northern Ireland** the level of tolerances applied as interim measure has been further reduced firstly in April 2020 and again in April 2021. The current tolerance levels depend on the type of consumer and correspond to 2 % for Power Generation, 3 % for Daily Metered and 5 % for Non-Daily Metered customers.¹⁸ Additionally, the small adjustment applied to determine the applicable prices was reduced in 2021 to 10 %.

¹⁷ Link to Bulgarian public consultation and results.

¹⁸ Link to review of tolerances in UK-NI.



Portugal has introduced in March 2021 the possibility to trade on a trading Platform allowing network users and the TSO to trade gas according to the Balancing NC provisions. However, the rules establishing the balancing actions for the TSO via STSP were published by the NRA in May 2021 and started to be applied as of 1 October 2021. In addition, due to the pandemic situation, in April 2020 the rules to determine the daily marginal prices¹⁹ were modified by the NRA. Further details can be found in Annex II.

In **Romania**, as of 1 October 2021, one of the pipelines of the dedicated Transmission System (transit) balancing zone has been integrated into the National Transmission System balancing zone. Implementation of information provisions for non-daily metered points is still ongoing.

Slovenia applied a few changes to the national balancing rules, valid as of September 2020²⁰, updating the lead times to submit and process trade notification of transactions at the Virtual

Trading Point and the imbalance charge calculation methodology. The methodology has been updated to more closely align with the definition of art.23of BAL NC where weighted daily average price for titled products is used as a base for calculation of marginal daily buy/sell price. There was also an update of the default rule used in case the marginal sell and buy prices and the weighted average prices are not available. According to the new rule if weighted average price (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.

In addition, nomination and re-nomination rules have been established for aggregated end consumer points.

In **Spain** there has been a change in the small adjustment value applied to determine the applicable prices. The small adjustment has been increased to 3 % of the WAP as for 1 April 2020.

¹⁹ National Regulation 356-A/2020 published on the 8 April 2020.

²⁰ Link to latest changes in Slovenian balancing rules.

2.1.1 Future changes to be implemented

Austria: In 2018 Austria started a process of redesign the current balancing regime.

The new balancing regime will be introduced as of 1 October 2022. The main changes to be implemented will see:

- Integrated daily balancing for transmission and distribution, with the same rules for all entry/ exit points and a single entity responsible for balancing, at transmission and distribution level;
- Implementation of daily imbalance prices according to the BAL NC (small adjustment 3 %);
- ▲ WDOs will be revisited;
- Implementation of neutrality charges.

Denmark/Sweden: The Danish TSO (Energinet) and Swedish TSO (Nordion Energi) have submitted to the Danish and Swedish NRAs in June 2021 a recommendation document to introduce WDOs in the Joint Balancing Zone as of 1 October 2022. The Danish and Swedish NRAs have approved the revised balancing regime in December 2021.²¹

Greece: A trading platform will be introduced in 2022. Greece currently has a virtual trading point and balancing platform which is used by the TSO to undertake balancing actions. Additionally, the implementation of an information model for non-daily metered flows is planned to go live in 2023. The Greek TSO (DESFA) has been appointed by the NRA as the NNGTS Forecasting Party, however the required IT system is currently in development therefore no forecasts are currently provided.

Hungary: Introduction of WDOs is planned as of 01 April 2022. The necessary regulations are ready and the technical development is in progress²².

Lithuania: In June 2021 a consultation was held to revise gas access and balancing rules²³. The new changes were approved on 29 December 2021 and new balancing rules take effect from 1 March 2022.

With the new rules, the possibility to transfer balancing responsibility to another network user will be introduced. A neutrality charge will be introduced as a separate charge. Moreover, the offer of "previous-day product" (allowing network users to revise their imbalance positions after the end of gas day) will be terminated and won't be available from 1 March 2022.

Northern Ireland: It is proposed that the balancing arrangements are modified to include biomethane entry points on the distribution networks in 2022.

Slovakia: Planned termination of interim measures by April 2024.

Portugal: A number of additional revision of the balancing rules entered into force as of 1 October 2021. The main changes in the revision concern:

- Linepack Flexibility Service (offered by using competitive mechanisms);
- Imbalance price (increase in the value of the small adjustment);
- Credit risk management (introduction of a risk-management entity and increase in the frequency of calculation of financial obligation);
- Settlement frequency (increase in the frequency);
- Imbalance calculation (changes in the trade notification processing period, time-control confirmed quantities and removal of next-day balancing for intraday metered and monthly adjustments for non-daily metered).

UK-Great Britain: following a failure of the number of network users as a consequence of the recent unprecedented gas price, a proposal has been submitted by the TSO to the NRA for consideration of a new TSO role to procure gas to meet demand of gas suppliers (utilising the services of failed gas network users) until they make arrangements with a new shipper. Under GB arrangements these suppliers are not able to deliver gas to the system. As such, hence enabling the TSO to efficiently procure volumes of gas for this interim period in a new role/ capacity (outside the procurement constraints of the residual balancing role) to deliver to the system to meet this demand represents the preferred approach. Akin to residual balancing, the costs the TSO incurs in this new role will be recovered from shippers via balancing neutrality. This is currently a proposed change which is subject to a decision by the GB NRA²⁴.

- 23 Link to public consultation to revise gas balancing rules in Lithuania.
- 24 Link to GB contingency plan.

²¹ Link to revised gas balancing model in DK/SE Joint Balancing Zone.

²² Link to WDOs introduction proposal in Hungary.

2.2 MERGER OF BALANCING ZONES

Since the last Implementation Monitoring Report, new balancing zone mergers have been accomplished and possible future balancing zone mergers are in progress:

Bulgaria: Merger of National and Transit balancing zones effective as of 1 October 2021.

Estonia and Latvia created a joint balancing zone as of 1 January 2020.

Germany: The merger of the two German gas market hubs Gaspool (GPL) and Net Connect Germany (NCG) has come into effect as of 1 October 2021. Trading Hub Europe (THE) is the new joint market area.

Finland: ongoing discussion on establishing a common balancing zone with Baltic States. A decision

in this regard has not yet been made and currently the TSOs in Finnish-Baltic region are looking for a solution for 4-country common tariff zone (currently Finland, Estonia and Latvia created a single entry tariff system) where the tariffs between the countries are removed and external entry tariffs are harmonised.

Lithuania: At the moment there is no decision on joining the common Estonian-Latvian balancing zone. However, discussions are ongoing to introduce a common tariff zone, i. e. removing the transmission tariffs (or apply 0 tariff) at Kiemenai point, which would allow to eliminate transmission cost between Lithuania, Latvia, Estonia and Finland.

2.3 OVERVIEW OF IMPLEMENTATION STATUS OF THE BAL NC PROVISIONS

2.3.1 Trade Notifications, Trading Platforms, Short Term Standardised Products (STSPs)

Trading platforms have been now established in almost all balancing zones, with exception of GR, SK and UK-NI.

PT has activated trading on a trading platform (Mibgas) as of 16 March 2021, however the TSO has not made use of it to undertake balancing actions based on the data collected²⁵. The use of

2.3.2 Balancing services

At 1 October 2021, balancing services have been procured by TSOs in 9 countries (DE (in both NCG and GP balancing zones), GR, LT, PL (in H-gas balancing zone), PT, SI, SK, UK-GB and UN-NI) 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. Nevertheless,

2.3.3 Incentives

At 1 October 2021, incentives are in place in 5 countries (AT, DE, ES, IT and UK-GB).

While in AT, ES, IT and UK-GB the incentive applies to incentivise the TSO/MAM to undertake balancing actions efficiently (according to Art. 11(1) of the BAL

the trading platform for balancing actions started as of 1 October 2021. In GR a trading platform will be established during 2022.

A balancing platform is in place in GR and SK, while in UK-NI the TSO relies solely on balancing services to undertake balancing actions.

from data reported it is observed that balancing services have not been used in GY 2020/21 in Slovenia, while in Finland the TSO is considering to activate balancing services in GY 2021/2022. Currently the Finnish TSO relies mainly on a separate balancing account (Imatra Balancing Settlement account) as a tool for cover the differences between physical and commercial flows.

NC), in DE the incentive mechanism applies for the provision of accurate forecast of network user's non-daily metered off-takes.

Further details on the incentive applied in AT, DE, ES, IT and UK-GB can be found in Annex II.

²⁵ Although the Trading platform was established in March 2021, the rules establishing the balancing actions via STSP were only published by the NRA in May 2021. By then some parameters to be applied still remained to be defined until the end of December 2021.



2.3.4 Nominations

Nomination and renomination rules have been fully implemented by all TSOs.

Hourly and daily (re)nomination co-exist at the two sides of one (or more) IP(s) in: AT and IT (Tarvisio/ Arnoldstein IP), at IP between BE and FR (Virtualys), in CZ at VIP Brandov, VIP Waidhaus, Český Těšín, Lanžhot, in PL at IP with CZ (Cieszyn interconnection point PL-CZ), in FR at IP with BE and Switzeland (Virtualys and Oltingue, respectively) and DE (at IP Obergailbach (FR) / Medelsheim (DE)), between NL (BBL) and UK (National Grid) at IP Bacton (BBL), between UK (National Grid) and BE at Bacton (IUK), in SK at all IPs with adjacent balancing zones.

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 except GR, SK and UK-NI, where interim imbalance charges apply. At Balticconnector interconnection point between FI and EE/LV balancing zone, which was commissioned at 1 January 2020, double-sided nomination procedure applies due to implicit capacity allocation mechanism where capacity (which has no price) is allocated based on confirmed nominations.

TSOs operating in 3 balancing zones have reported some updates in relation to the application of nomination and renomination rules at points other than IPs: In EE/LV, at entry from/exit to storage point, end consumer point, entry/exit point with 3rd countries; in FI at Imatra entry point (entry point from 3rd country) finally, in Slovenian balancing zone, at aggregated end consumer points.

BG terminated the use of interim imbalance charges in January 2020, following the establishment of the trading platform.

Further details on the methodology to determine the daily imbalance charges for each balancing zone can be found in Annex II.



2.3.6 Within Day Obligations (WDOs)

At 1 October 2021, Within Day Obligations continued to be applied only in AT, BE/LU, DE and NL, therefore there was no change compared to the past report.

In AT, the application of WDOs will be revisited with the entry into force of new balancing rules as of 1 October 2022.

In DK/SE, WDOs will be introduced as of 1 October 2022, while in HU the introduction of WDOs is planned as of 1 April 2022.

Further details on the application of WDOs in AT, BE/LU, DE and NL can be found in Annex II.

2.3.7 Neutrality arrangements

In almost all countries neutrality provisions have been implemented as per BAL NC, except for AT, GR and LT²⁶, where neutrality charges are still under implementation, and in DK/SE (in the Joint Balancing Zone) where there is no separate balancing neutrality charge²⁷. At 1 October 2021 in all countries except in AT²⁸ and GR, financial security measures have been established to prevent losses due to default payment by network users.

During 2020 ENTSOG and ACER²⁹, together with the TSOs, MAMs and national regulatory authorities, have been working extensively to investigate on the application of balancing neutrality require-

²⁶ A neutrality charge will be introduced in Lithuania as of 1 March 2022.

²⁷ Based on agreement between the Danish TSO and the Danish NRA, it was agreed not to implement a specific charge. Any income or deficit from balancing activity is automatically either paid back to network users or recovered through transmission tariffs.

²⁸ Currently AT has already established some financial security measures, namely a neutrality pot hold by the market area manager, which covers losses from balancing group responsibles (BGRs) who cannot pay their balance energy bills, plus a common security system at the clearing and settlement agency. Neutrality arrangements in accordance with the BAL NC will be established in Austria with the new balancing regime as of 1 October 2022.

²⁹ See ACER-ENTSOG Joint Policy Paper with recommendation to mitigate cases of balancing misconduct in EU.

ments and particularly on the application of credit risk management measures to prevent cases of missed payment of balancing charges by network users. Such episodes have been reported already in precedent years and have led to cases of financial losses for the TSOs concerned.

TSOs from 8 countries (ES, FR, HU, IT, NL, RO, PL, UK-GB) have reported that cases of default payment by NUs occurred within GY 2019/20-2020/21. In all cases, the credit risk measures implemented have been activated, however in the case of NL the episode was deemed as fraudulent behavior and resulted in a severe non-recoverable loss for the TSO. In RO, there have been cases where the network users have not fulfilled their payment

obligation. Despite numerous referrals by the TSO, the NRA refuses to require NUs to provide adequate guarantees. Moreover, 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. In UK-GB, a number of episodes of unpaid balancing charges have been recorded in GY 2020/21, which have led to termination of contracts of 7 network users and debt arising from unpaid energy charges smeared to users via balancing neutrality.

Further details on the neutrality provisions implemented in each balancing zone can be found in Annex II.

2.3.8 Information provisions

At 1 October 2021, almost all the countries had implemented the information provisions of BAL NC, with the exception of GR and RO.

 In RO the implementation of BAL NC regarding the provision of non-daily metered flows in still under discussion;

2.3.9 Linepack Flexibility Service (LFS)

Compared to the previous Implementation Monitoring Report, CZ, FR, NL and PT remained the only countries where a LFS was offered at 1 October 2021.

In PT, new rules for the offer of a LFS entered into force as of 1 October 2021. Until end of GY 2020/21,

 In GR, the required IT system to provide forecast of non-daily metered flows is currently under development (estimated go-live beginning of 2023).

Further details on the publication of relevant information according to Art. 32 for each balancing zone can be found in Annex II.

the LFS has been offered free of charge, which was justified by the absence of a trading platform. From 1 October 2021 the new mechanism fully complies with the BAL NC.

Further details on the application of the LFS in CZ, FR, NL and PT can be found in Annex II.

2.3.10 Interim measures

Interim measures in place at the entry into force of the BAL NC should have been terminated by April 2019 according to the provisions of Article 45(4). However, in case a balancing platform is established due to market illiquidity or because of lack of STSPs, the NRA can decide to continue its operation for another period of no more than 5 years.

At the reference date of 1 October 2021, 4 countries (GR, IE, SK and UK-NI) still have interim measures in place. The main reason indicated by these countries to continue using interim measures is because of the absence of sufficient liquidity of the short-term wholesale gas market and lack of a trading platform. In IE, the applied tolerances are needed to support the development of renewable gas injection.

Compared to the previous Implementation Monitoring Report, BG established a trading platform in 2020 and terminated the use of balancing services and interim imbalance charges. Ireland terminated the remaining tolerance as of 1 October 2020.

Interim measure	Country and Balancing Zone	Reason for applying the interim measure	Changes after GY 2018/19
Balancing platform	Greece	Absence of a trading platform	Planned termination following establishment of a trading platform in 2022
	Slovakia	Absence of a trading platform	Planned termination in April 2024No changes
Alternative to balancing platform/	Bulgaria (balancing services)	Absence of a trading platform	Terminated in 2020 following establishment of trading platform
	Slovakia (balancing services)	Absence of a trading platform	No changes
Interim imbalance charge	Bulgaria (administrated price)	Low liquidity of short-term wholesale gas market	Terminated in 2020 following establishment of trading platform
	Greece (price derived from balancing platform trades)	Low liquidity of short-term wholesale gas market	Termination will depend on establishment of a trading platform
	Slovakia (price derived from balancing platform trades)	Absence of a trading platform	Planned termination in April 2024 No changes
	UK-NI (proxy for a market price)	Low liquidity of short-term wholesale gas market	No changes
Tolerances	Bulgaria	Reduction of network users' financial exposure to excessive daily imbalance charges	Terminated in July 2019
	Ireland (25 % for Renewable Natural Gas RNG entry points)	Maintained to support development of renewable gas injection.	Tolerances at other points have been removed as of 1 October 2020.
	UK-Northern Ireland (2 % for Power Generation, 3 % for DM and 5 % for NDM)	Low liquidity of short-term wholesale gas market	No changes

Table 1: Overview of the evolution of interim measures since the last Implementation Monitoring Report (GY 2018/19)

The following table provides a schematic overview of the implementation of the BAL NC provisions in each balancing zone at of 1 October 2021. Detailed description of the balancing rules applicable in each balancing zone analysed can be found in Annex II.

AT Market Area East ³⁰ Image: Sector Se
BELUX H-zone Image: Constraint of the second of the se
BELUX L-zone Image: Comparison of the
BG-National balancing zone ³¹
Croatia No
Czech
DE-GASPOOL No
DE-NetConnect Germany No
Finnish balancing zone No
FR-TRF (GRTGaz) No
FR-TRF (Teréga) No
Greece (NNGTS) ³² Yes
Hungary No
Ireland ³³ Yes
Italy No
Joint Balancing Zone DK/SE ³⁴ No
Joint Balancing Zone EE/LV No
Lithuania ³⁵ No
Netherlands-GTS No
Poland H-gas ³⁶ No
Poland L-gas No
PL-TGPS (YAMAL) No
Portugal ³⁷ No
Romania ³⁸ No
Slovakia ³⁹ Yes
Slovenia No
Spain No
UK-GB No
UK-NI ⁴⁰ Yes

Implemented Improcess of implementation at 1 Oct 2021 Not applicable, as regards scope or implementation not required

Table 2: Overview of the BAL NC implementation in all balancing zones

30 Austria: Revision of current balancing regime currently ongoing.

- 31 Bulgaria: Interim measures terminated in GY 2019/20.
- 32 Greece: No trading platform established yet (balancing platform used as interim measure). Interim imbalance charges based on reference priced derived from auctions results at the balancing platform.
- 33 Ireland: tolerances applied only at RNG entry points (biomethane injection).
- 34 Joint Balancing Zone DK/SE: WDOs will be introduced as of 1 October 2022. No separate balancing neutrality charge has been implemented, however any income or deficit from the TSO's balancing activity is automatically either paid back to network users or recovered through transmission tariffs. Credit risks measures have been implemented.
- 35 Lithuania: A neutrality charge will be introduced in Lithuania as of 1 March 2022. Credit risks measures have been implemented.
- 36 Poland (H-gas, L-gas, TGPS balancing zones): Interim measures (balancing platform, interim imbalance charge) terminated on 1 April 2019.
- 37 Portugal: Trading platform established as of March 2021. New balancing rules will enter into force as of 1 October 2021.
- 38 Romania: Interim measures terminated on 1 April 2019.
- 39 Slovakia: Interim measures (balancing platform, balancing services, interim imbalance charge) still in place.
- 40 UK-NI: Interim measures (balancing services, interim imbalance charge, tolerances) still in place.

3 CONCLUSIONS

At 1 October 2021, almost all the countries fully applied the BAL NC provisions. FI has implemented the BAL NC as of 1 January 2020. Full implementation of the balancing rules is still being assessed based on development of the gas market.

Since the last Implementation Monitoring Report, 11 countries (AT, BG, ES, FI, HU, IE, IT, NL, PT, RO, SI, UK-NI) have reported updates to the national balancing rules. Further changes in the national balancing rules have been reported as being under implementation in 9 countries (AT, DK/SE, GR, LT, PT, SK, UK-GB and UK-NI). 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, BG terminated the use of interim measures. Interim measures are still in place in IE, GR, SK and UK-NI. The main reason indicated by these countries 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 are needed to support the development of renewable gas injection. The interim measures that remain in place in GR, SK and UK-NI are **planned to be removed** as soon as well functioning Trading Platforms are established and market liquidity is developed.

Trading platforms have been now established in almost all balancing zones, with exception of GR, SK and UK-NI. In PT the trading platform was established in March 2021, but the new rules enabling the TSO to perform balancing actions using STSPs entered into force as of 1 October 2021. In GR a trading platform will be established during 2022. A balancing platform is in place in GR and SK, while in UK-NI the TSO relies solely on balancing services to undertake balancing actions.

Balancing services have been procured by TSOs in 9 countries (DE (in both NCG and GP balancing zones), GR, LT, PL (in H-gas balancing zone), PT, SI, SK, UK-GB⁴¹ and UN-NI) 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 by all TSOs.

In almost all countries **neutrality provisions** have been implemented as per BAL NC, except for AT, GR and LT⁴², where neutrality charges are still under implementation, and in DK (applying to the overall Joint Balancing Zone DK/SE), where there is no separate balancing neutrality charge. At 1 October 2021 in all countries except in AT⁴³ and GR, financial security measures have been established to prevent losses due to default payment by network users.

TSOs from 8 countries (ES, FR, HU, IT, NL, RO, PL, UK-GB) have reported that cases of default payment by NUs occurred within GY 2019/20–2020/21.

At 1 October 2021, almost all the countries had implemented the information provisions of BAL NC, with the exception of GR and RO, where information provisions for non-daily metered flows are still under implementation.

In conclusion, this Implementation Monitoring Report shows that 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.

⁴¹ No balancing action was undertaken via balancing services in SI and UK-GB in GY 2020/21 based on the EM analysis.

⁴² A neutrality charge will be introduced in Lithuania as of 1 March 2022.

⁴³ Currently AT has already established some financial security measures, namely a neutrality pot hold by the market area manager, which covers losses from balancing group responsibles (BGRs) who cannot pay their balance energy bills, plus a common security system at the clearing and settlement agency. Neutrality arrangements in accordance with the BAL NC will be established in Austria with the new balancing regime as of 1 October 2022.

4 LIST OF ABBREVIATIONS AND COUNTRY CODES USED

ABBREVIATIONS

ACER	Agency for the Cooperation of Energy	IP	Interconnection Point
	Regulators	LFS	Linepack Flexibility Service
BAL NC	Balancing Network Code	MAM	Market Area Manager
CBA	Cost-Benefit Analysis	MSs	Member States
DA	Day-Ahead	NRA	National Regulatory Authority
EC	European Commission	NU(s)	Network User(s)
ENTSOG	European Network of Transmission System Operators for Gas	STSP(s)	Short-Term Standardised Product(s)
EU	European Union	TSO	Transmission System Operator
GY(s)	Gas Year(s)	VTP	Virtual Trading Point
IDM/DM/		WAP	Weighted Average Price
NDM	Intraday metered/Daily metered/	WD	Within-Day
		WDO(s)	Within Day Obligation(s)

COUNTRY CODES

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

(Great Britain and Northern Ireland)

UK-GB United Kingdom

UK-NI

ANNEX I: LIST OF BALANCING ZONES AT 1 OCTOBER 2021

Country	Balancing zone	Acronym	TS0
Austria	Austria - Market Area East	AT	GCA, TAG (TSOs) ⁴⁴ AGGM (MAM)
Belgium and Luxembourg	BeLux H-gas	BELUX-H	Fluxys (TSO) ⁴⁵
Belgium	BeLux L-gas	BELUX-L	
Bulgaria ⁴⁶	National Balancing zone (NGTN)	BG-N	Bulgartransgaz (TSO)
	Transit Balancing zone (GTNTT)	BG-T	
Croatia	Croatia	HR	Plinacro (TSO) ⁴⁷
Czech Republic	Czech Republic	CZ	Net4Gaz (TSO) ⁴⁸
Denmark and Sweden	Joint Balancing Zone DK-SE	JBZ-DK/SE	Energinet and Nordion Energi (TSOs)
Finland	Finnish Balancing Zone	FI	Gasgrid (TSO)
France	Trading Region France (TRF)	FR-TRF	GRTGaz, Teréga (TSOs)
Germany ⁴⁹	Gaspool (GP) Germany Market Area	DE-GPL	Gaspool (MAM)
	Net Connect Germany (NCG) Market Area	DE-NCG	NCG (MAM)
Greece	Greece (NNGTS)	GR	DESFA (TSO)
Hungary	Hungary	HU	FGSZ (TSO)
Ireland	Ireland	IE	GNI (TSO/DSO)
Italy	Italy	IT	Snam Rete Gas (TSO)
Latvia and Estonia ⁵⁰	Estonian-Latvian Joint Balancing Zone	LV	Conexus (TSO-Market Operator), Elering (TSO)
Lithuania	Lithuania	LT	Ambergrid (TSO)
The Netherlands	Dutch Balancing Zone (TTF) ⁵¹	NL(GTS)	GTS (TSO), BBL (TSO)
Poland	High-methane gas Balancing Zone (H-Gas)	PL-H	GAZ-SYSTEM (TSO)
	Low methane Balancing Zone (L-Gas) ⁵²	PL-L	
	Transit Gas Pipeline System (TGPS)	PL-TGPS	
Portugal	Portugal	PT	REN (TSO)
Romania	Romanian National Transmission System (NTS)	RO	Transgaz (TSO)
Slovenia	Slovenia	SI	Plinovodi (TSO)
Slovakia	Slovakia	SK	Eustream (TSO)
Spain	Spain	ES	Enagas Technical System Manager
UK ⁵³	Great Britain (NBP)	UK-GB	National Grid (TSO)
	Northern Ireland	UK-NI	PTL and GNI (UK) TSOs, GMO (MAM) ⁵⁴

Malta and Cyprus are excluded from report (under derogation).

44 GCA and TAG provided data in coordination with AGGM - Market Area Manager.

45 Fluxys provided data in coordination with Creos, Luxembourg TSO and Balansys, BeLux Market Area Manager.

46 Bulgaria National and Transit balancing zones have been merged as of 1 October 2021.

47 Plinacro provided data in coordination with HROTE – Croatian Market Operator. HROTE operates the VTP and the gas trading platform. It is also responsible for all financial settlement related to balancing action and for neutrality accounting.

48 Net4Gas provided data in coordination with OTE - Czech Market Operator.

49 Gaspool and Net Connect Gremany have been merged in Trading Hub Europe (THE) market area as of 1 October 2021.

50 As Estonia belongs to the Joint Estonian-Latvian balancing zone, data for the whole balancing zone have been provided by Conexus, which is also responsible for balancing in the Joint EE/LV balancing zone.

51 BBL is part of the TTF market area. GTS and BBLC have a joint entry/exit system, but with two different balancing regimes.

- 52 Poland L-methane Balancing zone connects customers with gas production facilities. The system is isolated and not directly connected with the H-methane balancing area.
- 53 Two separate balancing zones exist in Great Britain and Northern Ireland, therefore these two areas are considered as separate countries for the purpose of this report.

54 Data has been received by the Gas Market Operator for NI (GMO NI), a joint team that is responsible for the market related activities of the TSOs, GNI(UK) and Premier Transmission Limited (PTL).



ANNEX II: FACT SHEET ON BAL NC IMPLEMENTATION FOR EACH BALANCING ZONE

1 AUSTRIA

Key features	
Name of balancing zone(s)	Market Area East ⁵⁵
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 of BAL NC)	At 1 October 2021: Market Area Manager (MAM) (AGGM Austrian Gas Grid Management AG) responsible for ex-ante balancing. Separate clearing & settlement agent responsible for ex-post balancing (AGCS for Market Area East). These rules will be changed from 1 October 2022 onwards.
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	No
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	Implemented (portfolio balancing)
	WDOs apply only if the market area is undersupplied in total and if the hourly BG imbalances show a short position. The calculation is based on hourly imbalances and not on cumulative hourly imbalances on a given gas day. This sum, which is charged for hourly short positions, was reduced in GY 2019/20. If a Balance Group Responsible (BGR) has deviations in its balance group during a month being in sum not more than 500 euro (per month), the amount will not be charged. ⁵⁶

55 In Austria three market areas exists (East, Tyrol & Vorarlberg Market Areas). However, the market areas of Tirol and Vorarlberg have been partially integrated into the German market area NCG concerning the balancing regime and its' administration since 2013. TSOs with an entry-exit system are only available in Market Area East.

56 More detailed information can be found in the annually reports on balancing incentive markups, in the general terms and conditions of the MAM and in the background an analysis document concerning the amendments of the methodology.

Key features	
Incentives (Art. 11 of BAL NC)	Physical balancing of TSOs has to be done primarily by the usage of linepack. If necessary, the MAM procures volumes at the VTP at best achievable market price according to its GTC.
Daily imbalance charges (Art. 19–23 of BAL NC)	Implemented Daily imbalances are settled at the exchange of the VTP in the name and on behalf of the respective balance group responsible party, if the BGRPs do not balance themselves after receiving an imbalance notification.
	are published on the website of the operator of the virtual trading point. ⁵⁷ The imbalance quantity is calculated as the total sum of all imbalances of each balance group responsible.
Neutrality Arrangements (Art. 29–31 of BAL NC)	Not yet implemented. The clearing and settlement agency is responsible for the settlement of the imbalances on a monthly basis. Revenues and costs resulting from the procurement of physical balancing energy and from the settlement of the imbalances are documented on a neutrality account (AGCS). The balancing regime in place does not have yet neutrality fees, but the future balancing regime will include
Interim measures (Art. 45–50)	neutrality charges. No
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)): The MAM publishes a yearly Balancing report on the website: Publication of aggregate neutrality charges and balancing charges (art.29.4): Not available for MAM/TSO Report on the accuracy of the forecast of a network user's NDM off-takes (Art.42.3)

MAIN UPDATES IMPLEMENTED IN GY 2019/20-GY 2020/21

Changes in balancing regime implemented before 1 October 2021:

A small change concerning the so called structuring fee applied to WDOs took place, namely a reduction.⁵⁸

Future changes to be implemented:

New elements to be introduced from 1.10.2022 onwards⁵⁹:

- One entity (MAM) responsible for both ex-ante and ex-post balancing, at transmission and distribution level;
- Integrated daily balancing for transmission and distribution, with the same rules for all entry/ exit points;
- Implementation of daily imbalance prices in full compliance with BAL NC (small adjustment 3 %);
- ▲ WDOs revisited;
- Implementation neutrality charges.

⁵⁷ http://cegh.at

⁵⁸ Further information available here.

⁵⁹ Further details can be found in the document Redesigning the Austrian Gas Balancing Model.

2 BELGIUM & LUXEMBOURG

Key features	
Name of balancing zone(s)	BeLux-H and BeLux-L ⁶⁰
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 of BAL NC)	Fully implemented
Balancing services (Art. 8 of BAL NC)	No
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	Yes (System wide according to art. 25(1) of BAL NC)
	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.
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges (Art. 19–23 of BAL NC)	Implemented ⁶¹
Neutrality Arrangements	Implemented
(Art. 29–31 of BAL NC)	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.
	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.
Interim measures (Art. 45–50)	No
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)).
	Publication of aggregate neutrality charges and balancing charges (art.29.4).
	Report on the accuracy of the forecast of a network user's NDM off-takes (art 42.3): last report dated of 2019

MAIN UPDATES IMPLEMENTED IN GY 2019/20-GY 2020/21

No changes implemented or planned to be implemented.

60 BeLux-L zone applies only in Belgium

61 Link to daily imbalance charge calculation methodology

3 BULGARIA

Key features	
Name of balancing zone(s)	National Balancing Zone Transit Balancing Zone (merged as of 1 October 2021)
Distribution system part of balancing zone	No
Hub name (trading platform)	Balkan Gas Hub (BGH)/ Trayport Joule
VTP name	VTP
Implementation date of BAL NC	Interim measures terminated (tolerances removed in 2019, interim imbalance charge in 2020).
Balancing responsible (Art. 4.4 of BAL NC)	TSO - Bulgartransgaz
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented as of 1 January 2020
Balancing services (Art. 8 of BAL NC)	No
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges (Art. 19–23 of BAL NC)	Implemented ⁶² A public consultation was held on August 2021 to be set parameters valid for GY 2021/22 used for the daily Imbalance and neutrality charge calculation methodology (Balancing Methodology) for GY 2021/22. 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) and criteria according art 25 of the Balancing Methodology. Bulgartransgaz informed that no opinions or comments were received from interested parties. The new parameter will be applicable as of 1 October 2021. ⁶³
Neutrality Arrangements	Implemented
(Art. 29–31 of BAL NC)	Any costs and revenues arising from the following activity is passed on to network users:
	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;
	costs for carrying out the balancing activity carried out over the period of consideration of clearing the neutrality account, including:
	 costs for purchasing natural gas for physical balancing;
	 costs for purchasing natural gas for commercial balancing;
	operational costs for carrying out the activity;
	yearly depreciations of assets, with which the balancing activity is performed.
	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 (tolerances removed in July 2019, interim imbalance charge and balancing service agreements removed once trading platform became operational as of 1 January 2020)
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g))
	Publication of aggregate neutrality charges and balancing charges (art.29.4)
	Report on the accuracy of the forecast of a network user's NDM off-takes (art.42.3)

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Trading platform introduced as of 1 January 2020. Revision of the daily imbalance and neutrality charge calculation methodology approved in August 2021, with validity as of 1 October 2021. On 1 October 2021 Bulgartransgaz has merged the two balancing zones.

62 Link to the approved daily imbalance charge calculation methodology (art.20.2).

63 Link to public consultation.

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 of BAL NC)	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 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	No
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges	Implemented
(Art. 19–23 of BAL NC)	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. ⁶⁴
Neutrality Arrangements	Implemented
(Art. 29–31 of BAL NC)	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. ⁶⁵
	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	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)).
	Publication of aggregate neutrality charges and balancing charges (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 2019/20-GY 2020/21

No changes implemented or planned to be implemented.

64 Link to the approved daily imbalance charge calculation methodology (art.20.2).

65 Link to the NRA approved and published methodology for the calculation of the neutrality charges (art. 30.2). (Croatian only)

5 CZECH REPUBLIC

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 of BAL NC)	TSO – Net4Gas
	OTE as a market operator organizes 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 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	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. ⁶⁶
Linepack Flexibility Service (Art. 43–44 of BAL NC)	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. ⁶⁷
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges	Implemented
(Art. 19–23 of BAL NC)	According to 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. ⁶⁸
Neutrality Arrangements	Implemented
(Art. 29–31 of BAL NC)	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	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)).
	Publication of aggregate neutrality charges and balancing charges (art.29.4).
	Report on the accuracy of the forecast of a network user's NDM off-takes (art.42.3).

MAIN UPDATES IMPLEMENTED IN GY 2019/20-GY 2020/21

No changes implemented or planned to be implemented.

⁶⁶ Published information on balancing services according to art. 8.7.

⁶⁷ Link to the relevant documents that describe the offered linepack flexibility service.

⁶⁸ 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 ⁶⁹
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 of BAL NC)	TSO - Energinet
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	No
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges	Implemented
(Art. 19–23 of BAL NC)	The daily imbalance charge methodology 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). ⁷⁰
Neutrality Arrangements	Partially implemented
(Art. 29–31 of BAL NC)	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. ⁷¹ 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	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)).
	Publication of aggregate neutrality charges and balancing charges (art.29.4).
	Report on the accuracy of the forecast of a network user's NDM off-takes (art.42.3).

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Planned implementation of WDOs as of 1 October 2022. Energinet and Nordion Energi have submitted to the Danish and Swedish NRAs in June 2021 a recommendation document to introduce WDOs in the Joint Balancing Zone as of 1 October 2022.

The Danish and Swedish NRAs have approved the revised balancing regime in December 2021.72

⁶⁹ ETF: trading point for Danish gas exchange, GTF: trading point for bilateral trades on secondary market

⁷⁰ Link to the approved daily imbalance charge calculation methodology (art.20.2).

⁷¹ Link to the NRA approved and published methodology for the calculation of the neutrality charges (art. 30.2).

⁷² Additional information can be found at this link.

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 of BAL NC)	TSO – Gasgrid
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	No Balancing service agreements have not been activated in gas year 2021 but are planned to be used in the future. The impact of the balancing services is seen to be limited, because the balancing services had not been activated so far. Gasgrid has also so called Imatra separate balancing account as a tool for balancing where the differences between physical and commercial flows have been maintained.
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges	Implemented ⁷³
(Art. 19–23 of BAL NC)	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. So far, this has never happened in practice as balancing services have not been activated. The imbalance quantity calculation been adapted to take into account losses at the distribution level. Specifically, losses in DSO network are included to the basket of retailer with delivery obligation who is responsible for losses in the certain DSO network and the metering points which cannot be read remotely on a daily basis.
Neutrality Arrangements	Implemented ⁷⁴
(Art. 29–31 of BAL NC)	 The following costs and revenues are passed on to network users: paid and credited Imbalance Charges; costs and revenues relating to balancing actions undertaken; costs relating to balancing service agreements in force at that time; development, investment and maintenance costs relating to balancing actions; personnel costs relating to balancing actions; and finance costs relating balancing actions.
	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. Creditworthiness requirements have been established to secure payment of imbalance charges.
Interim measures (Art. 45–50)	No
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)): Gasgrid will develop the balancing action publication site in 2022.
	Publication of aggregate neutrality charges and balancing charges (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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Finland opened its gas market on 1 January 2020 with the start of operation of Balticonnector. The BAL NC was fully applicable since then. Discussion is ongoing with the Baltic States on possible establishment of a single balancing zone. A decision on this regard has not been made and currently the TSOs in Finnish-Baltic region are looking for a solution for 4-country common tariff zone (currently Finland, Estonia and Latvia form a 3 country common tariff zone) where the tariffs between the countries are removed and external entry tariffs are harmonised.

⁷³ Link to the approved daily imbalance charge calculation methodology (art.20.2).

⁷⁴ 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 Terégaimplemented BAL NC in October 2015. New balancing zone TRF operational since November 2018.
Balancing responsible (Art. 4.4 of BAL NC)	TSO - GRTGaz and Teréga
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	No
Linepack Flexibility Service (Art. 43–44 of BAL NC)	Yes GRTGaz (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). ⁷⁵ Teréga (SET service): Only available for network users supplying end-consumers consumption points. It incentivizes 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 imbalance is invoiced with a non-penalized price. Marginal price is applicable when there is a TSO intervention. ⁷⁶
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges (Art. 19–23 of BAL NC)	Implemented ⁷⁷
Neutrality Arrangements (Art. 29–31 of BAL NC)	Implemented GRTGaz: 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.
	Teréga: 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 1st 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. ⁷⁸
Interim measures (Art. 45–50)	No
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)): <u>GRTGaz</u> (detailed information on balancing actions and prices can be downloaded in .xls for each day), <u>Teréga</u> .
	Publication of aggregate neutrality charges and balancing charges (art.29.4): GRTGaz, Teréga.
	Report on the accuracy of the forecast of a network user's NDM off-takes (art.42.3): Teréga: Global TSO forecasts indicators assessments; The KO value and % replacement correspond to the reliability_ assessment of NDM off-takes forecasts.

MAIN UPDATES IMPLEMENTED IN GY 2019/20-GY 2020/21

No changes implemented or planned to be implemented.

- 77 Link to the approved daily imbalance charge calculation methodology (art.20.2): GRTGaz, Terega.
- 78 Link to the NRA approved and published methodology for the calculation of the neutrality charges (art. 30.2).

⁷⁵ More information available here.

⁷⁶ More information available here.

9 GERMANY

Key features	
Name of balancing zone(s)	Net Connect Germany (until 1 October 2021) Gaspool (until 1 October 2021) Trading Hub Europe (as of 1 October 2021)
Distribution system part of balancing zone	Yes
Hub name (trading platform)	EEX (and ICE for trades in adjacent balancing zone)
VTP name	NCG-VHP (until 1 October 2021) GPL-VHP (until 1 October 2021) THE-VTP (as of 1 October 2021)
Implementation date of BAL NC	1 October 2015 ⁷⁹
Balancing responsible (Art. 4.4 of BAL NC)	Market Area Manager (until 1 October 2021, two MAMs: Gaspool and Net Connect Germany, as of 1 October 2021 – Trading Hub Europe)
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented Updates in merit order (or NCG only): 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, NCG launched a new product "Short-Call Balancing Services" (SCB) within MOL 4 on 1 May 2020.
Balancing services (Art. 8 of BAL NC)	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 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	 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. lf 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: a) The market area managers 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 result in costs incurred for the market area manager.
Incentives (Art. 11 of BAL NC)	An incentive mechanism applies for providing an accurate forecast for each network user's non daily metered off-takes. ⁸⁰
Daily imbalance charges (Art. 19–23 of BAL NC)	Implemented Imbalance charges based on difference between the sum of all entry and the sum of all exit positions per balancing group.

79 The BAL NC was applicable in Germany already in 2015. However, a balancing platform was used until 1 January 2018.

80 More information available here.
Key features	
Neutrality Arrangements (Art. 29–31 of BAL NC)	Implemented The following costs and revenues are passed on to network users: Revenues Revenues from balancing gas Revenues from imbalance charges Revenues structuring charge/flexibility charge
	 Revenues from balancing neutrality charge Revenues RLM quantity differences Revenues from negative Reconciliation neutrality charge Interest earned Other revenues
	Costs Expenditures from balancing gas Expenditures from imbalance charges Expenditures for RLM quantity differences Expenditures for positive reconciliation quantities Interest charges Other Costs
	Costs and revenues from balancing activities are divided between the two neutrality accounts according to an allocation formula on a daily basis.
	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.
	The yearly ratio for a gas year will be calculated once all final allocation data for that gas year has been collected.
	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).
	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.
Interim measures (Art. 45–50)	No
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)): NCG, GPL.
	Publication of aggregate neutrality charges and balancing charges (art.29.4): <u>NCG</u> , GPL: <u>prices, fees and</u> charges, balancing neutrality accounts.
	Report on the accuracy of the forecast of a network user's NDM off-takes (art.42.3): https://www.bdew.de/media/documents/SLP-Evaluierungsbericht.pdf (German only) https://www.bdew.de/media/documents/2021-03-31_SLP-Evaluierungsbericht.pdf (German only)

Balancing zone merger between NCG and GPL active as of 1 October 2021. Trading Hub Europe is currently the market area manager for the entire German market area.

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)	No TP
VTP name	Hellenic Trading Point (HTP)
Implementation date of BAL NC	Under implementation. Interim measures applied (Balancing platform)
Balancing responsible (Art. 4.4 of BAL NC)	TSO – DESFA
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Not yet implemented (STSPs available on balancing platform and balancing services are used)
Balancing services (Art. 8 of BAL NC)	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 of BAL NC)	No
WDOs (Art. 24-28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges	Not yet implemented
(Art. 19–23 of BAL NC)	The settlement of imbalances is performed daily (indicative values) using a Reference Price. The remaining imbalance is charged/reimbursed at the Marginal Buy/Sell Prices that are derived from auctions results at the Balancing Platform. The imbalance quantity is calculated as: (Physical Inputs + VTP Purchases) - (Physical Offtakes + VTP Sales). Quantity that Users deliver to offset the system's operational gas is excluded from their daily imbalance quantity. ⁸¹
Neutrality Arrangements	Partially implemented (no credit risk management)
(Art. 29–31 of BAL NC)	The costs and revenues are passed on to network users (according to art.29.2 BAL NC):
	Procurement of Balancing Services
	Purchase/Sale of STSPs on Balancing Platform
	System usage cost to use balancing services
	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)	Yes (balancing platform and interim imbalance charges)
	A Balancing Platform is used to trade STSPs between TSO and NUs in the absence of a Trading Platform. Interim imbalance charges are used to settle the imbalances based the price derived from auctions results at the balancing platform. The TTF price is currently used as reference price.
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)).
	Publication of aggregate neutrality charges and balancing charges (art.29.4).
	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 beginning of 2023) therefore no forecasts are currently provided.

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Trading Platform to be introduced in early 2022. Implementation of information provisions for non-daily metered flows to be implemented in 2023.

81 Link to approved imbalance charges calculation methodology (Art.20.2 of BAL NC).

11 HUNGARY

Key features	
Name of balancing zone(s)	Hungary
Distribution system part of balancing zone	No
Hub name (trading platform)	Two balancing markets: Trading platform operated by CEEGEX Ltd.; Trading Platform operated by FGSZ Trading Platform Ltd (Kereskedési Platform).
VTP name	Magyar Gázkiegyenlítési Pont (MGP)
Implementation date of BAL NC	1 October 2015
Balancing responsible (Art. 4.4 of BAL NC)	TSO – FGSZ Ltd
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	No
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	No (will be implemented as of 1 April 2022)
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges	Implemented
(Art. 19–23 of BAL NC)	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. ⁸²
Neutrality Arrangements	Implemented
(Art. 29–31 of BAL NC)	The following costs and revenues are passed on to network users:
	the loss or gain on the purchase or sale of balancing gas,
	membership fees on trading platforms,
	balancing gas purchase and sale variable fees.
	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.
	The use of 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 complex security system including creditworthiness compliance, individual and collective securities. The losses of the TSO related to the balancing activity of the network user can be recovered through the neutrality pool. ⁸³
Interim measures (Art. 45–50)	No
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)).
	Publication of aggregate neutrality charges and balancing charges (art.29.4).
	Report on the accuracy of the forecast of a network user's NDM off-takes (art.42.3): Data not public.

MAIN UPDATES IMPLEMENTED IN GY 2019/20-GY 2020/21

Variant 1 information model for determination of non-daily metered off-takes implemented after 1 October 2019.

Future implementation: Hungary is planning to introduce WDOs from 01 April 2022. The necessary regulations are ready and the technical development is in progress⁸⁴.

⁸² Link to the approved and published daily imbalance charges methodology (art.20.2).

⁸³ Link to the NRA approved and published methodology for the calculation of the neutrality charges (art. 30.2).

⁸⁴ Link to WDOs introduction proposal in Hungary.

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 of BAL NC)	TSO – Gas Networks Ireland (GNI is both TSO and DSO)
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	No
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges	Implemented ⁸⁵
(Art. 19–23 of BAL NC)	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	Implemented
(Art. 29–31 of BAL NC)	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	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)).
	Publication of aggregate neutrality charges and balancing charges (art.29.4).
	Report on the accuracy of the forecast of a network user's NDM off-takes (art.42.3): N/A

MAIN UPDATES IMPLEMENTED IN GY 2019/20-GY 2020/21

Removal of tolerances except for a 25% Tolerance at Renewable Natural Gas (RNG) Entry Points (Cush entry point). Tolerances applied to other points have been removed as of 1 October 2020.

85 Link to the approved daily imbalance charge calculation methodology (art.20.2).

13 ITALY

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 of BAL NC)	TSO – SNAM
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	No
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	Yes ⁸⁶
	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 three mechanisms:
	1) Offtakes forecast at the redelivery transport points (D-1 forecast vs. actual)
	2) Efficient TSO balancing actions: difference between SMPbuy SMPsell vs. SAP (Weighted Average Price)
	3) Residual balancing (use of linepack and operation storage within a predefined range)
	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
	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.
	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.
Daily imbalance charges	Implemented ⁸⁷
(Art. 19–23 of BAL NC)	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.
Neutrality Arrangements	Implemented ⁸⁸
(Art. 29–31 of BAL NC)	The neutrality of Snam Rete Gas includes:
	imbalance charges,
	 costs/revenues from purchasing/selling STSPs and gas volumes for operating the system (e. g. for managing linepack variations)
	 costs/revenues from purchasing/selling gas volumes for OBA management at interconnection points with other national TSOs, storage and regasification plants.
	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.
	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.
	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.
Interim measures (Art. 45–50)	No

86 Link to Regulator's Resolution (Integrated Text on Gas Balancing).

87 Link to the approved daily imbalance charge calculation methodology (art.20.2): See Snam Rete Gas Network Code (chapter 9, paragraph 4.4).

88 Link to the NRA approved and published methodology for the calculation of the neutrality charges (art. 30.2).

Key features	
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)).
	Publication of aggregate neutrality charges and balancing charges (art.29.4) (See section "Regulation EU 312/2014, art. 29 (rif.: Network Code, Chapter. 9, § 1.3, a) and b))
	Report on the accuracy of the forecast of a network user's NDM off-takes (art.42.3).

In accordance to the provisions of Resolution n. 148/2019/R/gas, as implemented in SRG Network Code, starting from 1 January 2020⁸⁹:

- Eeach gas day D, the allocations provided to the network users at redelivery points to distribution networks (city gates) for NDM final customers is equal to the last forecasts provided during the gas day D by the TSO determined on the basis of the information provided by the distribution system operator concerned.
- The differences between gas volumes actually delivered to the distribution system in the gas day D and the initial allocations provided to the network users (so called "Delta IN-OUT") is attributed to the TSO in its role of Balancing Operator (and no more allocated to each shipper).

89 Relevant Documentation: Link to Regulator's Resolution; Link to SRG Network Code (see chapter 9).



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	Estonia under derogation until 1 January 2022; Latvia terminated interim measures on 1 October 2018; Joint Estonian-Latvian balancing zone operational since 1 January 2020
Balancing responsible (Art. 4.4 of BAL NC)	TSOs have implemented TSO-TSO cooperation based market area manager as an internal entity of TSO: Conexus Baltic Grid Common Market Area Division.
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	Yes (procured via Public Tender according to art. 8.3 of the BAL NC)
	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.
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges	Implemented ⁹⁰
(Art. 19–23 of BAL NC)	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
	The value of the small adjustment applied to determine the marginal prices has been updated as of 01.07.2020. Values of currently applicable small adjustment: marginal sell price (MSP) incentive factor value -0.95; marginal buy price (MBP) incentive factor value -1.10.
Neutrality Arrangements	Implemented
(Art. 29–31 of BAL NC)	Neutrality charge shall be set taking into account any such costs and revenues:
	 costs and revenues of TSO arising from daily imbalance charges; costs and revenues of TSO arising from the balancing actions; administrative costs of TSO arising from the balancing actions; other costs and revenues of TSO related to the balancing activities undertaken by the TSO.
	The neutrality charge attributed to each network user 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. ⁹¹
	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.
Interim measures (Art. 45–50)	No
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)); monthly.
	Publication of aggregate neutrality charges and balancing charges (art.29.4): https://www.conexus.lv/neutrality-charge • https://elering.ee/bilansihaldus-0
	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. First report shall be published in 2022.

MAIN UPDATES IMPLEMENTED IN GY 2019/20-GY 2020/21

Establishment of Estonian-Latvian common balancing zone starting from 1 January 2020.

90 Link to approved and published daily imbalance charge calculation methodology (art. 20.2).

91 Links to the NRA approved and published methodology for the calculation of the neutrality charges (art. 30.2): https://likumi.lv/ta/id/310338; https://elering.ee/sites/default/files/2021-12/Common%20Balancing%20Rules%20EF_1V_0.pdf

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 of BAL NC)	TSO (Amber Grid)
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	Yes (procured via public tender procedure according to art. 8.3 of BAL NC)
	Lithuania is small and quite isolated gas market, there are only few market players active on wholesale market. It is expected that liquidity will increase in coming years due to regional market development and changing market environment, following the GIPL construction.
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges (Art. 19–23 of BAL NC)	Implemented ⁹²
Neutrality Arrangements	Not yet fully implemented
(Art. 29–31 of BAL NC)	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. However neutrality charges have not yet been implemented. The neutrality is covered via transmission tariff.
	A neutrality charge will be introduced as of 1 March 2022.The neutrality fee will be 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. ⁹³
	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.
Interim measures (Art. 45–50)	No (tolerances removed as 1 April 2019)
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)).
	Publication of aggregate neutrality charges and balancing charges (art.29.4): Not yet implemented.
	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 2019/20-GY 2020/21

In June 2021 it was held a consultation to consultation to revise gas access and balancing rules. The new changes were approved at 29 December 2021 and new version of rules will be applied from 1 March 2022.

With the new rules the possibility to transfer balancing responsibility to another network user will be introduced. A neutrality charge will be introduced as a separate charge. Moreover, the offer of "previous-day product" (allowing network users to revise their imbalance positions after the end of gas day) will be terminated and won't be available from 1 March 2022.

⁹² Link to the approved daily imbalance charge calculation methodology (art.20.2).

⁹³ More information available here.

16 THE NETHERLANDS

Key features	
Name of balancing zone(s)	TTF Market Area; BBL ⁹⁴
Distribution system part of balancing zone	Yes
Hub name (trading platform)	ICE Endex Within-Day Market
VTP name	Title Transfer Facility (TTF)
Implementation date of BAL NC	1 October 2015
Balancing responsible (Art. 4.4 of BAL NC)	TSO – GTS
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	No
Linepack Flexibility Service (Art. 43–44 of BAL NC)	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. ⁹⁵
WDOs (Art. 24–28 of BAL NC)	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. ⁹⁶
	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 network users pay the LFS fee $(0,4\% * abs(POS) * neutral gas price)$ 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 action 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 of BAL NC)	No
Daily imbalance charges (Art. 19–23 of BAL NC)	GTS offers a linepack flexibility service (LFS). The imbalance quantity calculation has been adapted to 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. ⁹⁷
	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.

⁹⁴ GTS and BBLC have a joint enty/exit system, but with two different balancing regimes. The BBL is integrated in the TTF market area on the Dutch side and markets its capacity solely at IP Bacton in the UK.

⁹⁵ Additional information on LFS.

⁹⁶ For more information on the randomisation, see here.

⁹⁷ Link to the approved daily imbalance charge calculation methodology (art.20.2).

Key features	
Neutrality Arrangements (Art. 29–31 of BAL NC)	Implemented in 2020
	The following costs/revenues are passed on to network users:
	 balancing actions that occur due to an emergency situation;
	 balancing actions that occurred due to a disturbance in the information systems;
	revenues as a result of network users using the Linepack Flexibility Service;
	costs as a result of losses due to default in payment.
	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 charge is specified. ⁹⁸
	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).
Interim measures (Art. 45–50)	No
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)).
	Publication of aggregate neutrality charges and balancing charges (art.29.4).
	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.

Explicit implementation of the neutrality principle in the Transmission code Gas in 2020.

Future implementation updates after 1 October 2021: Discussion is ongoing between the Dutch TSO and the NRA to add one element to the neutrality charge (to be paid by shippers that display behaviour that is not in line with BAL NC, and the 'revenues' of these fees are returned to the market via the neutrality charge). If network users behaviour occurs repeatedly their license could be revoked.

This introduction will not change the way that the neutrality principle functions, however it is not yet clear, if this code change proposal will be accepted and if any amendments will effectively take place.

98 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 Giełda Energii S.A. (TGE): Trades in adjacent balancing zones possible based on the NRA approval (Germany-THE, EEX) 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 of BAL NC)	TSO – GAZ-SYSTEM
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented (Balancing platform removed as of 1 April 2019)
Balancing services (Art. 8 of BAL NC)	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). ⁹⁹
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges	Implemented (interim imbalance charge removed as of 1 April 2019)
(Art. 19–23 of BAL NC)	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. ¹⁰⁰
Neutrality Arrangements	Implemented
(Art. 29–31 of BAL NC)	The following costs and revenues are passed on to network users: 1) costs and revenues arising from daily imbalance settlements 2) costs and revenues arising from the balancing actions undertaken by the transmission system operator, 3) other costs and revenues related to the balancing activity,
	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). 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. ¹⁰¹
	 The Financial Security may be established by the shipper only in one of the following forms: a cash deposit, returned after settlement of the completed transmission service, an irrevocable and unconditional bank or insurance guarantee 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 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.
	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.
Interim measures (Art. 45–50)	No (terminated on 1 April 2019)
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)):
	Publication of aggregate neutrality charges and balancing charges (art.29.4):
	Report on the accuracy of the forecast of a network user's NDM off-takes (art.42.3).

MAIN UPDATES IMPLEMENTED IN GY 2019/20-GY 2020/21

No changes implemented.

 $99\ \mbox{Link}$ to the published information on balancing services.

100 Link to the approved daily imbalance charge calculation methodology (art.20.2).

101 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 ¹⁰²
Balancing responsible (Art. 4.4 of BAL NC)	TSO – REN
Trade notifications, Trading Platforms,	Trading platform established as of March 2021.
STSPS (ARL 5, 7, 9, 10 OF BAL NC)	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 of BAL NC)	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	Yes
(Art. 43–44 of BAL NC)	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.º 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 1 October 2021 the new mechanism fully complies with article 44.1 of BAL NC.
WDOs (Art. 24-28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges	Implemented ¹⁰³
(Art. 19–23 of BAL NC)	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 ¹⁰⁴ , 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 %). 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 %).
	Imbalance is calculated as follows for each network user i that uses the service, on day d: Imbalance i $d = $ Supplies i $d = $ Offtakes i $d + $ Adjustment i $d + 155$ i d
	innoalance i,u – Supplies i,u – Ontakes i,u + Aujustinent i,ü + LFS i,ü

¹⁰² 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.

¹⁰³ $\underline{\mathsf{Link}}$ to the approved daily imbalance charge calculation methodology (art.20.2).

¹⁰⁴ National Regulation 356-A/2020 published on the 8 April 2020.

Key features	
Neutrality Arrangements	Implemented ¹⁰⁵
(Art. 29–31 of BAL NC)	The following costs and revenues arising from balancing activity are included in the neutrality account:
	Daily imbalance charge
	Financial reconciliation
	 Balancing actions carried out by the TSO
	Cost of access to trading platforms for the purchase and sale of gas
	Default in stocks charges
	Linepack Flexibility Service Charges
	Cost of guarantees for financing operations for the purpose of carrying out the compensation actions
	Until 01 October 2021 any corrections on the non-daily-metered points were made by a later physical compensation.
	From 01 October 2021 a financial reconciliation was implemented for this purpose, which is included in the neutrality.
	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.
Interim measures (Art. 45–50)	No
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)).
	Publication of aggregate neutrality charges and balancing charges (art.29.4).
	Report on the accuracy of the forecast of a network user's NDM off-takes (art.42.3).

In 16 March 2021 the trading Platform Mibgas entered into force, thus allowing network users and also, on a later stage the TSO, to negotiate according to the established in the Balancing NC.

A number of additional revision of the balancing rules is currently ongoing. The main changes in the revision regard¹⁰⁶:

- ▲ Linepack Flexibility Service (offered by using competitive mechanisms);
- Imbalance price (increase in the value of the small adjustment);
- Credit risk management (introduction of a risk-management entity and increase in the frequency of calculation of financial obligation);
- ▲ Settlement frequency (increase in the frequency);
- Imbalance calculation (changes in the trade notification processing period, time-control confirmed quantities and removal of next-day balancing for intraday metered and monthly adjustments for non-daily metered).

¹⁰⁵ Link to the NRA approved and published methodology for the calculation of the neutrality charges (art. 30.2).

¹⁰⁶ Link to NRA decision.

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 of BAL NC)	TSO – Transgaz
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	No
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges (Art. 19–23 of BAL NC)	Implemented ¹⁰⁷
Neutrality Arrangements	Implemented
(Art. 29–31 of BAL NC)	Any costs and revenues arising from imbalances, purchases/sales TSO/storage and withdrawal on TSO account are passed on to network users.
	The value of the neutrality account is divided pro-rata by the quantity transported through the NTS. 108
	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.
Interim measures (Art. 45–50)	No (Interim imbalance charge, tolerances terminated as of 1 April 2019)
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)).
	Publication of aggregate neutrality charges and balancing charges (art.29.4).
	Report on the accuracy of the forecast of a network user's NDM off-takes (art.42.3): Full implementation of Art 36-42 is still underway since not all distribution operators provide the necessary information to the TSO. After implementation of the methodology, every two years in accordance with Article 42(3)

MAIN UPDATES IMPLEMENTED IN GY 2019/20-GY 2020/21

One of the pipelines of the Romanian Dedicated Transmission System (transit) balancing zone has been integrated into the Romania National Transmission System balancing zone, as of 01.01.2020.

107 Link to the approved daily imbalance charge calculation methodology (art.20.2).

108 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
Implementation date of BAL NC	1 October 2015
Balancing responsible (Art. 4.4 of BAL NC)	TSO – Plinovodi
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	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 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges	Implemented
(Art. 19–23 of BAL NC)	Imbalances are calculated based on each balancing group position as intake to the system – offtake from the system +/– trades on the VTP.
	The daily imbalance charge methodology has been updated in 2020. From the transactions on the trading platform one price is calculated and for the imbalance charges the price is adjusted with small adjustment of $+/-10$ %. The default rule used in case the marginal sell and buy prices and the weighted average prices are not available has also been updated. According to the new rule 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. ¹⁰⁹
Neutrality Arrangements	Implemented
(Art. 29–31 of BAL NC)	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. ¹¹⁰
	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	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)).
	Publication of aggregate neutrality charges and balancing charges (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 2019/20-GY 2020/21

Changes to the lead times to submit and process trade notification of transactions at the Virtual Point and update of imbalance charge calculation methodology. The methodology has been update closer to definition of art.23 of BAL NC where weighted daily average price for titled products is used as a base for calculation of marginal daily buy/sell price. Update of the default rule used in case the marginal sell and buy prices and the weighted average prices are not available.¹¹¹

¹⁰⁹ $\underline{\mathsf{Link}}$ to the approved daily imbalance charge calculation methodology (art.20.2).

¹¹⁰ Link to the NRA approved and published methodology for the calculation of the neutrality charges (art. 30.2).

¹¹¹ More information available here.

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							
Implementation date of BAL NC	lot yet fully implemented (interim measures still applied)						
Balancing responsible (Art. 4.4 of BAL NC)	TSO – Eustream						
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Not yet fully implemented						
Balancing services (Art. 8 of BAL NC)	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 of BAL NC)	No						
WDOs (Art. 24–28 of BAL NC)	No						
Incentives (Art. 11 of BAL NC)	No						
Daily imbalance charges (Art. 19–23 of BAL NC)	Not yet implemented (interim imbalance charge applied)						
Neutrality Arrangements	Implemented						
(Art. 29–31 of BAL NC)	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. ¹¹²						
	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 April 2024)						
	Interim imbalance charge: applicable price derived from balancing platform trades.						
	The price applied (in €/MWh) to determine the Negative 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 Positive 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 + 0.5) * (1 + small adjustment expressed in %). SA = 7 %						
	The CEGHIX Index is the price index of the trading venue CEGH Gas Exchange of Wiener Börse for the relevant Gas Day.						
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)):						
	Publication of aggregate neutrality charges and balancing charges (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 2019/20-GY 2020/21

The NRA approved the use of interim measures until April 2024.

112 Link to the NRA approved and published methodology for the calculation of the neutrality charges (art. 30.2).

22 SPAIN

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 of BAL NC)	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 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	No
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	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	Implemented
(Art. 19–23 of BAL NC)	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 $\%^{113}$
Neutrality Arrangements	Implemented
(AIT. 23-31 0I BAL NG)	The methodology to determine the neutrality charge ¹¹⁴ 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:
	 Negative, users with accumulated monthly imbalance shall pay the Technical System Manager the aforementioned net economic result in proportion to their accumulated monthly imbalance.
	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.
	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:
	Execution of the user's guarantees.
	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.
	Request from the operators of the trading platforms and central counterparties the amounts withheld by them in accordance with NRA's Circular 2/2020.
	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.
Interim measures (Art. 45–50)	No

113 $\underline{\mathsf{Link}}$ to the approved daily imbalance charge calculation methodology (art.20.2).

114 Link to the NRA approved and published methodology for the calculation of the neutrality charges (art. 30.2).

Key features	
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)):
	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).
	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.

Increase in the small adjustment value applied to determine the applicable prices (from 2,5% to 3%) as for 1 April 2020.



23 UK - GREAT BRITAIN

Key features	
Name of balancing zone(s)	Great Britain (NBP)
Distribution system part of balancing zone	Yes
Hub name (trading platform)	National Balancing Point (NBP)
VTP name	National Balancing Point (NBP)
Implementation date of BAL NC	1 October 2015
Balancing responsible (Art. 4.4 of BAL NC)	TSO (National Grid)
Trade notifications, Trading Platforms, STSPs (Art. 5, 7, 9, 10 of BAL NC)	Implemented
Balancing services (Art. 8 of BAL NC)	$\rm Yes^{115}$ (procured via public tender procedure according to art. 8.3 of the BAL NC)
	Balancing service used to provide TSO with flexible gas or demand side response, where the market based products are not expected to be delivered in time to retain the system within its safe operational envelope.
Linepack Flexibility Service (Art. 43–44 of BAL NC)	Νο
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	Yes
	To ensure the GB TSO does not incur excessive costs for the industry, the NRA incentivises the GB TSO to balance and trade efficiently through Residual Balancing incentives. The TSO is incentivised in two ways;
	 to minimise the price spread of its balancing actions (to restrict the impact of such actions on the market price) and;
	2) to minimise the change in the linepack volumes between the start and end of the day. By seeking to resolve any system imbalances of the relevant day the costs of such are targeted to those responsible for the imbalance.
Daily imbalance charges	Implemented
(Art. 19–23 of BAL NC)	The imbalance quantity is calculated as the difference between:
	 the sum of: a) the aggregate of the user's system inputs; b) the aggregate of the Trade Nomination Quantities under any Acquiring Trade Nominations made by the user;
	and
	 2) the sum of: a) the aggregate of the user's system outputs; b) the aggregate of the Trade Nomination Quantities under any Disposing Trade Nominations made by the user; and c) the user's Aggregate User Unidentified Gas.
	Determination of daily imbalance quantity (<u>UNC TPD</u> E5.1 and E5.2)
	The imbalance quantity calculation is adapted to take into account the "Unidentified Gas". This accounts for differences between volumes measured at offtake from the transmission system (flowing into distribution networks) and the aggregates of volumes measured as exiting the distribution network. Such quantities are allocated to users in accordance with a prescribed methodology (Allocation of Unidentified Gas – AUG).
	Moreover, if locational products are traded, the associated price and volume is included in the System Average Price. The value of the small adjustment applied to determine the marginal prices is updated every year, according to national code. ¹¹⁶ Application of charges to imbalance quantity (<u>UNC TPD</u> F1.2, F2.2 and F2.3).

115 An Operating Margins Report is prepared and published annually. Each report includes a description of how the OM Requirements (volumes) are determined each year. Latest report available here.

116 See latest update of the value of the small adjustment.

Key features	
Neutrality Arrangements	Implemented
(Art. 29–31 of BAL NC)	All costs and revenues arising from aggregate system payments and aggregate system receipts, is passed on to network users. ¹¹⁷
	The Residual Balancing incentive evaluates the impact National Grid has on the market in its residual balancing role by measuring the price range of its trading actions compared to the System Average Price (SAP). This incentivises the TSO to avoid market intervention and where this is necessary, minimise the impact it has on market prices. From this perspective this is a behavioural incentive as opposed to a strict cost incentive.
	In principle, if individual users balance supply and demand, this minimises the value of balancing neutrality charges and negates the need for the TSO to undertake residual balancing actions.
	Energy Balancing Credit Rules are in place as credit risk safeguard measure. Network user's in default can be subject to termination of the transport service in accordance with the Uniform Network Code (UNC TPD Section V4.3). In case of a default attributable to a network user such values are recovered from all other users via balancing neutrality charges. In GY 2020/21 a number of episodes of unpaid charges has been recorded, resulting in termination of users's contracts and debt arising from unpaid energy charges smeared to users via balancing neutrality.
Interim measures (Art. 45–50)	No
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)). ¹¹⁸
	Publication of aggregate neutrality charges and balancing charges (art.29.4): Not published but TSO provides the details to each network user on a monthly basis via their neutrality statements.
	Report on the accuracy of the forecast of a network user's NDM off-takes (art.42.3).

24 UK - NORTHERN IRELAND

Key features	
Name of balancing zone(s)	Northern Ireland
Distribution system part of balancing zone	Yes
Hub name (trading platform)	No trading platform established yet (NBP used to trade in adjacent balancing market)
VTP name	Northern Ireland Balancing Point (NIBP)
Implementation date of BAL NC	Interim measures still applied. A trading platform was first introduced to the NI market in October 2015 via a VTP but currently there is not sufficient liquidity.
Balancing responsible (Art. 4.4 of BAL NC)	TSOs – PTL and GNI (UK)
Trade notifications, Trading Platforms,	Not yet implemented
STSPs (Art. 5, 7, 9, 10 of BAL NC)	To date there is not sufficient liquidity due to the size and limitations of the market to introduce STSPs.
Balancing services (Art. 8 of BAL NC)	Yes (procured via public tender procedure according to art. 8.3 of BAL NC)
	Northern Ireland is a small market will limited number of market participants and currently no competing sources of gas. 100 % of gas is imported and market participants have stated that they have no interest in trading within NI other than title transfers to accommodate IP capacity booking arrangements. Due to being part of the UK and NI's proximity to the NBP, network users use that hub to trade gas, therefore do not need to trade in NI to manage their daily activity. It is important to note that the Balancing Buy Services contracts are effectively using a third party to trade at the adjacent hubs.
Linepack Flexibility Service (Art. 43–44 of BAL NC)	No

117 <u>Methodology</u> to determine the neutrality charge.

118 The GB TSO is required to establish the "System Management Principles Statement" (SMPS) under its Licence to operate and its purpose is to describe the basis on which it will determine when a system balancing action is needed and the appropriate balancing tool to utilise.

Key features	
WDOs (Art. 24–28 of BAL NC)	No
Incentives (Art. 11 of BAL NC)	No
Daily imbalance charges (Art. 19–23 of BAL NC)	Not yet implemented – Interim imbalance charge applied ¹¹⁹
Neutrality Arrangements (Art. 29–31 of BAL NC)	Implemented Costs and revenues passed on to network users cover: imbalance charges, balancing costs, scheduling charges and unauthorised flows. ¹²⁰ In order to mitigate possible default in payment of balancing charges, network users required to put in place financial security equal to 80% of the Forecast Annual Charges. The financial security is used to cover possible losses due to default payment.
Interim measures (Art. 45–50)	 Yes Balancing services Tolerances: If tolerances are exceeded, network users pay the marginal prices for the marginal imbalance quantity. The current tolerance levels are: 2% for Power Gen, 3% for DM and 5% for NDM. Interim imbalance charge: A proxy is use to determine the applicable prices, either the marginal prices or the published NBP System Buy and Sell Prices. The applicable prices are determined according to the following formula: In case of positive Imbalance – an Imbalance Charge shall be payable to it equal to the sum of: (a) Quantity Within Tolerance x Daily Gas Price; plus (b) Marginal Imbalance Quantity (Aggregate NI Imbalance - Imbalance Tolerance Quantity) x Psmps, where Psmps is the lower of: (i) the Daily Gas Price multiplied by 0.9; or (ii) the System Marginal Sell Price on the relevant Gas Flow Day D (as defined in the GB Uniform Network Code). In case of negative Imbalance – an Imbalance Charge shall be payable by the Shipper equal to the sum of: (a) Quantity Within Tolerance x Daily Gas Price; plus (b) Marginal Imbalance – an Imbalance Charge shall be payable by the Shipper equal to the sum of: (a) Quantity Within Tolerance x Daily Gas Price; plus (b) Marginal Imbalance – an Imbalance Charge shall be payable by the Shipper equal to the sum of: (a) Quantity Within Tolerance x Daily Gas Price; plus (b) Marginal Imbalance Quantity (Aggregate NI Imbalance - Imbalance Tolerance Quantity) x Psmps where Psmpb is the higher of: (i) the Daily Gas Price multiplied by 1.1; or (ii) the System Marginal Buy Price on the relevant Gas Flow Day D (as defined in the GB Uniform Network Code).
Information provision	Publication of balancing actions (Art 9.4, Art. 32.2 and Art. 33.1(g)): Publication of aggregate neutrality charges and balancing charges (art.29.4): Communicated to Network users on the Transporter's IT system. Report on the accuracy of the forecast of a network user's NDM off-takes (art.42.3).

Imbalance tolerances have been reduced twice during this period, firstly in April 2020 and again in April 2021.¹²¹ Small Adjustment was also reduced in 2021 to 10 Initial Modification Report:%.¹²² Future balancing rules implementation: It is proposed that the balancing arrangements are modified to include biomethane entry points on the distribution networks in 2022.

¹¹⁹ Link to the approved daily imbalance charge calculation methodology (art.20.2).

¹²⁰ Link to the NRA approved and published methodology for the calculation of the neutrality charges (art. 30.2).

¹²¹ Tolerance Review.

¹²² Initial Modification Report, Einal Modification Report.

ANNEX III: INFORMATION PROVISION

			Frequency of forecast updates or of apportionment of measured flows per day					
		Intraday metered inputs and off-takes (Art.34.2)	Daily metered off-takes (apply only for 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]	
AT	Market Area East	Base Case	Intraday metered inputs and off-takes, Non-daily metered off-takes	-	-	1	3	

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	
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	
BG	Bulgaria National and Transit Balancing Zone	Variant 1	Intraday metered inputs and off-takes, Daily metered inputs and off-takes.	24h/day	4	-		
CZ	Czech Republic	Base Case	Daily metered inputs and off-takes, Non-daily metered off-takes	-		1	2	
DE	NCG/GP	Variant 2	Intraday metered inputs and off-takes, Non-daily metered off-takes	24		1		
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	
ES	Spain	Base Case	Intraday metered inputs and off-takes, Daily metered inputs and off-takes, Non-daily metered off-takes	2		1	2	
FI	Finnish Balancing Zone	Base Case	Intraday metered inputs and off-takes, Daily metered inputs and off-takes	Allocation is based on metered data	-	-	-	

FR	Trading Region France (GRTgaz)	Base Case	Intraday metered inputs and off-takes, Non-daily metered off-takes	24	-	17	21	
FR	Trading Region France (Teréga)	Base Case	Intraday metered inputs and off-takes, Non-daily metered off-takes	24 mesures from TSO (Distrib + Indus) 2 mesures by DSOs (Distrib)		5 forecasts from TSOs on global values metered + non metered (distrib) 2 updates from DSO for forecasts on non-metered points (distrib)	9 forecasts from TSOs on global values metered + non metered (distrib) 2 updates from DSO for forecasts on non-metered points (distrib)	
GR	Greece	Base Case	Intraday metered inputs and off-takes	5				

Time of provided forecasts or of provided apportionment of measured flows per day								Period of provided allocation			
Intraday metered i takes (Art.34)	inputs and off-	Daily metered off-takes (apply only for 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 appied (Art.37.2)			
1st update on D (measured flows, Art. 34.3) [hour: hh:mm; winter time]	2 nd update on D (measured flows, Art.34.4) [hour: hh:mm; winter time]	1 st update on D (apportionment of measured flows) [hour: hh:mm; winter time]	2nd update on D (apportionment of measured flows) [hour: hh:mm; winter time]	Forecast (Art. 36.1.a) [hour: hh:mm; winter time]	1 st update on D (forecast (Art. 36.2)/ apportionment of measured flows (Art. 36.4)) [hour: hh:mm; winter time]	2 nd 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		
7:25 (for final customers above 10 MW contracted capacity)	8:25 (for final customers above 10 MW contracted capacity)	-	-	12:00	12:00	17:00	aggregated provisional consumption per supplier (for load profile metered customers) provided on D+1, 12:00, by DSO	-	8 (resp. 10) working days after the respective month the final allocation data for final customers are provided by the DSO's to balance group responsible partys and suppliers		
07:00	08:00	07:00	08:00		07:00	08:00	provided each hour and not later than 30' after the allocated hour		M+1 (by 10 th business day of the month)		
07:00	08:00	07:00	08:00	-	07:00	08:00	provided each hour and not later than 30' after the allocated hour	-	M+1 (by 10 th business day of the month)		
7 a.m. winter time	8 a.m. winter time	7 a.m. winter time	8 a.m. winter time				lh		2h		
	-			13:00	13:00	23:00	7 hours		11 days after the end of month		
The network users receive the 1 st update at 16:00. Additionally network users can request for updates immediatly after the first hour of the gasday.	The network users receive the 1 st update at 19:00. Additionally network users can request for updates immediatly after the first hour of the gasday.			12:00			7 hours		M+2M - 10 WD		
13:45 (CET)	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)		
14:00 CET	21:00 CET	•	•	13:00 CET	14:00 CET	21:00 CET	1 day		M(Month)+15		
40 minutes after each data for points connec transmission network i	hour the metered ted to the s available for NUs	-	-	The estimation is produced by the TSO based on the historical data	-	-	D+1 by 12:00 UTC (daylight saving time) and by 11:00 UTC (summer time)	n/a	Sixth Gas Day of each Gas Month M+1 by 8:00 UTC (daylight saving time) and by 7:00 UTC (summer time).		
07:55:00 WT	08:55:00 WT (every hour)	•	•	13:26:00 WT	06:56:00	07:26:00 (every hour)	6h after EOD (D+1 at 12:00 WT)		10th working day M+1		
06:40:00 UTC WT	every hour		-	12:00 UTC WT (and 13:00 UTC WT) TSO forecasts are updated 5 times	13:00 UTC WT TSO forecasts are updated 9 times	16:00 UTC WT	7h after EOD (D+1 at 12:00 UTC WT)		10th working day M+1		

10:00 CET	13:15 CET	-	-	Although DESFA has been appointed by the NRA as the NNGTS	7 hours	-	10 working days
				Forecasting Party, the required IT system is currently in development (estimated go-live beginning of 2023) therefore no forecasts are currently provided			

			Frequency of forecast updates or of apportionment of measured flows per day					
				Intraday metered inputs and off-takes (Art.34.2)	Daily metered off-takes (apply only for variant 1) (Art.35.1)	Non daily metered (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]	
HR	Croatia	Base Case	Intraday metered inputs and off-takes, Daily metered inputs and off-takes, Non-daily metered off-takes	2	-	1	2	
HU	Hungary	Variant 1	Intraday metered inputs and off-takes	2	-	-		
IE	Ireland	Base Case	Intraday metered inputs and off-takes	24	1	1	4	
ΙΤ	Italy	Base Case	Intraday metered inputs and off-takes, Daily metered inputs and off-takes, Non-daily metered off-takes	2		1	2	
LT	Lithuania	Base Case	Daily metered inputs and off-takes, Non-daily metered off-takes		-	1	2	
LV/EE	Estonian-Latvian common balancing area	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	
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	
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	
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	-	
RO	Romania	Base Case	Intraday metered inputs and off-takes, Daily metered inputs and off-takes	2	•	(work in progress)	(work in progress)	
SI	Slovenia	Variant 1	Intraday metered inputs and off-takes, Daily metered inputs and off-takes	2	2		2	
SK	Slovakia	No Info Model In Place (No Dm Nor Ndm Customers)	Intraday metered inputs and off-takes	24	-		-	
UK-NI	Northen Ireland	Base Case	Daily metered inputs and off-takes, Non-daily metered off-takes	-		1	3	
UK-GB	Great Britain	Base Case	Daily metered inputs and off-takes, Non-daily metered off-takes	n/a GB does not have any intra-day meters		4	5	

Time of provided forecasts or of provided apportionment of measured flows per day							Period of provided allocation		
Intraday metered takes (Art.34)	inputs and off-	Daily metered off-takes (apply only for 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 appied (Art.37.2)	
1 st update on D (measured flows, Art. 34.3) [hour: hh:mm; winter time]	2nd update on D (measured flows, Art.34.4) [hour: hh:mm; winter time]	1* update on D (apportionment of measured flows) [hour: hh:mm; winter time]	2 nd update on D (apportionment of measured flows) [hour: hh:mm; winter time]	Forecast (Art. 36.1.a) [hour: hh:mm; winter time]	1 st update on D (forecast (Art. 36.2)/ apportionment of measured flows (Art. 36.4)) [hour: hh:mm; winter time]	2nd 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
10:00	18:00			12:00	13:00	17:00	D+1		M+1
14:00:00	18:00:00	-	-	-		-	6 hours, (D+1 12:00:00)	-	
05:00	07:00	09:00	-	09:00	09:00	15:45	D+1	D+1	D+5
14:00	18:00			13:00	14:00	18:00	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
				an initial forecast by 11:00 h UTC (winter time) or 10:00 h UTC (daylight saving) on day D-1,	first update by 08:00 h UTC (winter time) or 07:00 h UTC (daylight saving), on day D	second update 13:00 h UTC (winter time) or 12:00 h UTC (daylight saving), on day D	no later than 13:00 h UTC (winter time) or 12:00 h UTC (daylight saving) of gas day D+1		not later than 07:00 UTC daylight saving and 08:00 UTC winter time on 6th calendar day after the reporting period
06:05	06:10	-	-	-	06:05	06:10	15 minutes after ending of D (06:15)	-	15 minutes after ending of D (06:15)
13:00	17:00			12:00	13:00	19:00	6 hours after day D		without undue delay after the end of the gas month, usually in the middle of the next gas month
13:00	17:00		-	12:00	13:00	19:00	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 to 7th day of the following gas month.
13:00:00	20:00:00			11:00:00			1 day		M+6
11:00:00 AM(UTC)	7:00:00 PM(UTC)	-	-	-	-	•	7 hours	-	7 hours
14:00	20:00	14:00	20:00		14:00	20:00	4 hours	-	10 working days in month M+1 for the month M
06:20:00 (and updated every following hour)	07:20							1 day	10 days after the end of month
-	-	-	-	By 08:00 D-1	By 12:00 D	By 16:00 D	-	1	5
			UK time: 12:00 14:00 18:00 01:00	UK time: 12:00	UK time: 15:00 18:00 21:30 01:00	D+1		Entry = M+15 Exit = D+5	

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PART 2



FOURTH ENTSOG REPORT ON EFFECT MONITORING OF THE BALANCING NETWORK CODE

2022

COVERS GY 2019/20 AND GY 2020/21

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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 fourth 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 measures¹²³. This Effect Monitoring Report focusses on the effects of the BAL NC on EU balancing zones at the end of GY 2020/21 (until the reference date of 1 October 2021). For some indicators, the evolution over the last four gas years (GY 2017/18–GY 2020/21) has also been assessed.

123 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.

1 TSO PARTICIPATION AND DATA COLLECTION

In order to produce the current report, ENTSOG collected data by means of a questionnaire from 27

TSOs/Market Area Managers (MAMs)¹²⁴ operating in the following balancing zones:

Balancing zone	TSO/Market Area Manager (MAM)	Country		
Market Area East	GCA, TAG (TSOs) ¹²⁵	Austria		
BeLux H-gas	El	Delaium and Luxambaura		
BeLux L-gas (only Belgium)	riuxys (150) ²²⁰	beigium and Luxembourg		
National Balancing zone (NGTN)	Pulgartransgaz (TSO)	Pulgaria		
Transit Balancing zone (GTNTT)	Dulgartransgaz (150)	Duigaria		
Croatia	Plinacro (TSO) ¹²⁷	Croatia		
Czech Republic	Net4Gaz (TSO) ¹²⁸	Czech Republic		
Joint Balancing Zone DK-SE	Energinet (TSO) ¹²⁹	Denmark and Sweden		
Gaspool (GPL) Market Area	Gaspool (MAM)	Cormony		
Net Connect Germany (NCG) Market Area	NCG (MAM)	Germany		
Finnish Balancing Zone	Gasgrid (TSO)	Finland		
Trading Region France (TRF)	GRTgaz, Teréga (TSOs)	France		
Greece (NNGTS)	DESFA (TSO)	Greece		
Hungary	FGSZ (TSO)	Hungary		
Ireland	GNI (TSO/DSO)	Ireland		
Italy	Snam Rete Gas (TSO)	Italy		
Lithuania	Ambergrid (TSO)	Lithuania		
Estonian-Latvian Joint Balancing Zone	Conexus (TSO-Market Operator)	Latvia and Estonia		
Dutch Balancing Zone (TTF)	GTS (TSO)	The Netherlands		
High-methane gas Balancing Zone (H-Gas)				
Low methane Balancing Zone (L-Gas)	GAZ-SYSTEM (TSO)	Poland		
Transit Gas Pipeline System (TGPS)				
Portugal	REN (TSO)	Portugal		
Romanian National Transmission System (NTS)	Transgaz (TSO)	Romania		
Slovenia	Plinovodi (TSO)	Slovenia		
Slovakia	Eustream (TSO)	Slovakia		
Spain	Enagas (TSO) ¹³⁰	Spain		
Great Britain	National Grid (TSO)	UK-GB		
Northern Ireland	GMO (MAM) ¹³¹	UK-NI		

Table 1: List of TSOs/MAM participating to the BAL NC Effect Monitoring data collection

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 and Market Monitoring Report.

125 GCA and TAG provided data in coordination with AGGM - Market Area Manager.

126 Fluxys provided data in coordination with Creos, Luxembourg TSO and Balansys, BeLux Market Area Manager.

129 Energinet provided data for the Joint Balancing Zone DK/SE and on behalf of the Swedish TSO Nordion Energi.

130 Enagas has provided data on the behalf of Enagas Technical System Manager (Enagas GTS).

131 Data has been received by the Gas Market Operator for NI (GMO NI), a joint team that is responsible for the market related activities of the TSOs, GNI(UK) and Premier Transmission Limited (PTL).

¹²⁴ According to Article 4(4) of the BAL NC, TSOs can delegate the responsibility of keeping their transmission networks in balance to a third entity. In this case, the BAL NC rules apply to that entity to the extent defined under the applicable national rules. Market Area Managers or other entities responsible for balancing gas networks, have been established in Austria, Belgium, Croatia, Czech Republic, Germany, Spain and Northern Ireland.

¹²⁷ Plinacro provided data in coordination with HROTE - Croatian Market Operator.

¹²⁸ Net4Gas provided data in coordination with OTE – Czech Market Operator.

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
- Indicator BAL.2.2: TSO balancing volume as % of Domestic Volume
- Indicator BAL.3:¹³² Net NUs imbalances as % of Market Volume
- Indicator BAL.4:¹³³ 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, 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.

Compared to the previous BAL NC Effect Monitoring report¹³⁴, one indicator (previously named "BAL.3 – Net TSOs' balancing actions as % of Domestic Volume") was removed, while the methodology to calculate the current indicator BAL.3 has been slightly reviewed, in order to improve the quality of the analysis and the underlying assumptions¹³⁵. The comparison between net TSOs' balancing action volume (old indicator BAL.3) and net Network Users' imbalances volume (new indicator BAL.3) has been incorporated as part of the additional analysis of network users' imbalances provided in Annex VII of this report.

Moreover, considering the advanced stage of implementation of the BAL NC in most balancing zones covered by the effect monitoring analysis, it has been deemed appropriate not to cluster the balancing zones according to the chosen implementation date of the BAL NC, as done in past reports, but to present the results of the indicators for all balancing zones. Nevertheless, 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 linepack fluctuations. The TSOs should aim at maximising their balancing needs by 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 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).

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.

¹³² Named as Indicator BAL.4 in previous monitoring reports

¹³³ Named as Indicator BAL.5 in previous monitoring reports

¹³⁴ See chapter 2 of the ENTSOG BAL NC Effect monitoring report 2019.

¹³⁵ Find more information in Chapter 2.4 of this report.

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

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

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

Granularity: yearly volume; **Unit of yearly volume**¹³⁶: $\sum_{d=1}^{365} MWh/d$

2.1.1 Analysis of results

The data collected for GY 2020/21 show that during the past gas year most TSOs relied on Title products when undertaking balancing actions in their respective balancing zones (see Figure 1).

The analysis of indicator BAL.1 does not include Bulgaria's Transit balancing zone, Poland-L gas and TGPS balancing zones, where no balancing action was concluded by the TSOs in GY 2020/21.

In Finland, the BAL NC has been implemented as of 1 January 2020 and a trading platform has been established. However, as at 1 October 2021 it was not used by the TSO to undertake balancing actions. The system imbalances are mainly due to the difference between physical and commercial flows at Imatra entry point (entry point from 3rd country). A dedicated balancing account has been established (i. e., Imatra Balance Settlement Account). Through this account the TSO buys/sells gas that is needed to cover the differences between nominated and metered flows at the Imatra entry point. Considering the peculiarity of the Finnish balancing regime it is deemed that the TSO balancing actions are not representative of TSO balancing, therefore FI has been excluded from the assessment of indicator BAL.1.



Figure 1: Indicator BAL.1 (%) for GY 2020/21

Other type of STSPs besides Title products (Within Day and Day Ahead) have been used in Germany (NCG and GPL balancing zones), France (TRF) and in the Netherlands (TTF). In both NCG and GPL balancing zones, Temporal, Locational and/or Temporal-Locational products are 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 a few days of GY 2020/21 (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

¹³⁶ For leap years 366 instead of 365.

and gas is then taken in/delivered within 1 hour after the balancing action has been taken.

In Greece and Slovakia, title products are available at the established balancing platforms which are still used as an interim measure due to illiquid markets in these countries. In Italy, another tool is provided just to reconcile the operating differences between nominated and metered gas flows from/to storage facilities at the end of the day, namely Operational Storage (SOP). Balancing services have been used more or less extensively in 9 balancing zones (DE-GP, DE-NCG, GR, LT, LV-EE, PL-H, PT, SK and UK-NI).

- ▲ In the **German** balancing zones (NCG and GPL), balancing services have been used on a few days only, accounting for 0,17 % and 0,5 % of the total amount of balancing actions undertaken by the Market Area Manager (MAM) in NCG and GPL, respectively. In both German Balancing Zones, 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, in NCG, other hourly balancing services have been used at the network points Elten and Vreden (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 Portugal, a Trading Platform was set up as of 16 March 2021. In May 2021, a new set of rules was established, in order to fully comply with the BAL NC, which would allow the TSO to undertake balancing actions through STSPs as of 1 October 2021. Until September 2021, according to the previous rules, the TSO could use the balancing services procured via a different procedure than a public tender (according to Art. 8.4 of the BAL NC). From 1 October 2021, the TSO undertook balancing actions by purchasing gas via the new balancing services mechanism. The balancing actions through STSPs were performed after the establishment of applicable parameters in December 2021.

- Balancing services share in the newly established Latvian-Estonian balancing zone accounted for 16 % of total balancing actions and balancing services have been used in situations when STSPs were economically less efficient or in case locational products were needed.
- In Lithuania, balancing services accounted for 64 % of the total balancing actions. This is due to limited market liquidity with only few market players active on the wholesale market. It is expected that liquidity will increase in coming years following regional market development and after GIPL LNG facility will become operational.
- In Poland, H-gas¹³⁷ balancing zone balancing services have been used every day but the total quantity of gas purchased via balancing services amounts to 0,2 % when compared to the total balancing actions volume.
- In Slovakia, balancing services have been used when STSPs on the balancing platform were not available.
- In UK-NI, all balancing actions have been taken via balancing service in absence of balancing platform. The contracts were tendered to companies registered to trade in UK-GB (NBP) and gas was shipped to UK-NI.

Comparing the values of indicator BAL.1 in **countries that have applied and/or are still applying interim measures**¹³⁸ (BG, IE, GR, LV, LT, PL, RO, SK, UK-NI), over the last four gas years it can be observed a progressive decline in use of balancing services in most balancing zones.

Among the countries that had terminated the use of interim measures as at 1 October 2021 (Fig.2), in Bulgaria balancing services have been used as an alternative to a balancing platform until the trading platform became operational as of 1 January 2020. The Romanian TSO terminated the procurement of balancing services already in GY 2017/18.

¹³⁷ No balancing actions have been undertaken in Poland L-gas and TGPS balancing zones, therefore these have not been included in the analysis.

¹³⁸ Sweden has not been considered in this analysis as it is has 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.

The Lithuanian TSO has relied more on balancing services in GY 2020/21 compared to the previous GYs. As reported by the Lithuanian TSO, an increase in imbalance quantities was registered in GY 2020/21, which affected the need for TSO to take balancing actions. Also, there was the possibility to use a previous-day product allowing network users to exchange their imbalance positions after

the end of gas day, also ex-post trade is possible on VTP, which made it more difficult to calculate the residual imbalance and maximise the use of STSP. Moreover, it is noted that Lithuania is small and relatively isolated gas market, with few market players active on wholesale market, therefore liquidity is not yet well developed.



Figure 2: Countries that terminated the use of interim measures at 1 October 2021

Among the countries that are still applying interim measures as at 1 October 2021, UK-NI is the only country where balancing actions are still taken exclusively via balancing services. Ireland did not procure balancing services since commencing trading on the trading platform in May 2018 and the existing contracts were not renewed after their expiration date (31 December 2020).

In Greece, the use of balancing services has consistently decreased over the period considered, whilst in Slovakia it can be observed that there has been an increased in the use of balancing services in GY 2020/21 compared to GY 2019/20. This was due to high imbalances registered in September 2020 due to nomination curtailment of gas flows towards Ukraine. Balancing services were therefore used to a greater extent to cover such imbalances. Nevertheless, this level of nominations curtailment remained an isolated case and did not repeat throughout the year.



Figure 3: BAL.1 Countries under interim measures at 1 October 2021

2.1.2 Trading in adjacent balancing zones

In Germany, Poland and Slovakia, the NRA has approved the possibility to trade STSPs in adjacent balancing zones.

NCG and GPL have been registered as network users in the Netherlands and have traded gas at the Virtual Trading Point TTF using the PEGAS trading platform. In addition, NCG used the ICE Endex for trading activities. As of 1st of October 2021 Trading Hub Europe, if needed, can still procure the balancing gas quantities required on the exchange via the EEX and ICE Endex trading platforms at the Dutch Title Transfer Facility. The Polish TSO had received the approval from the NRA to trade on OTE (Czech balancing zone) and at EEX in Germany. However, in GY 2020/21, no trade on the adjacent trading platform has been made.

The Slovak TSO has received approval by the NRA to trade at the Austrian gas hub (CEGH Gas Exchange).

The amount of gas traded in adjacent balancing zones has not been considered for the calculation of indicator BAL.1. Nevertheless, to provide a complete assessment of the TSOs/MAM's balancing action, table 2 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-Gaspool	75,3682	4 %
DE-NetConnect Germany	5,766	0,01 %
Poland H-gas	0	0 %
Poland TGPS	0	0 %
Slovakia	9,000	13 %

Table 2: Balancing actions taken in adjacent balancing zone, compared to the total balancing action volume.

2.1.3 TSO's balancing actions volume versus frequency of balancing actions

To complete the assessment of the TSOs role in contributing to keep 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).

Fig. 4 and Fig.5 below show the relation of the total TSOs action volume and the total number of days when balancing actions have been taken in GY 2020/21. Year-on-year comparison of the total number of days when TSOs undertook balancing actions over the last four GYs is presented in Annex IV.

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





In Austria, Belgium L-zone, Bulgaria, Lithuania, 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 Austria and 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 High-calorific balancing zone, the TSO action volume is higher than in the Low-calorific zone, but in both Belgium H-zone and Belgium L-zone the TSO takes action on a daily basis. In the Dutch balancing zone, there is also a within-day balancing regime. However, the total amount of gas traded by the TSO for balancing purposes is higher than other balancing zones with similar regime.

In Poland, H-zone TSO takes action on a daily basis.

In Romania, the TSO undertook balancing action over 290 days in GY 2020/21. The frequency of TSO's balancing actions has increased compared to previous GYs (see Annex V) following the increased liquidity on the Romanian market. The fact that fewer balancing actions have been concluded in the past was due to lower liquidity in the Romanian market, not to a lower need for such actions to be performed by the TSO. As the market has matured, the frequency of actions resulting in transactions has increased. This explains the link between the increase in market liquidity and the number of balancing actions that ended with successful transactions.

The more frequent role of TSO action in Greece can be explained by the lack of a trading platform, which means that the TSO relies on balancing platform and balancing services to keep the system in balance. The value of the total volume of gas traded by TSO/ MAMs for balancing purpose in Germany, Italy and UK-GB is higher compared to the other balancing zones, depending on a bigger size of the respective gas market.

A significant difference between the two German balancing zones both in terms of volumes of gas traded by the MAM for balancing purposes and frequency of balancing actions (see Figure 5).



Figure 5: TSOs balancing action volume (MWh/y) vs. N of days when balancing actions are taken in the German balancing zones)

Compared to Gaspool, in NCG balancing zone, balancing actions are taken on a daily basis. This can be associated with the need for the MAMs to exchange gas to manage physical conversion of gas quality when network users exchanged gas between NCG and GPL balancing zones, but also to 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.
2.2 INDICATOR BAL.2.1: TSO BALANCING VOLUME AS % OF MARKET VOLUME

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

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

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

Granularity: yearly volume; **Unit of yearly volume**¹⁴⁰: $\sum_{d=1}^{365} MWh/d$

Values of the indicator closer to 0 show a minimised quantity of gas traded by the TSO compared to the market volume.

2.2.1 Analysis of results

Figure 6 shows the relation between TSO actions and Market volume for GY 2020/21. As per indicator BAL.1, Finland has not been considered in the assessment and neither have Bulgaria's Transit balancing zone, Poland L-gas and TGPS balancing zones, where no TSO's balancing actions have been reported.



Figure 6: Indicator BAL.2.1 for GY 2020/21

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.

140 For leap years 366 instead of 365.



Figure 7: YoY comparison BAL.2.1 (GY 2019/20 vs. GY 2020/21)

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

In Greece, Poland (in L-gas and TGPS balancing zones) and Romania, the market volumes include quantities delivered by NUs 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 NCG has the highest level of balancing actions undertaken by the MAM compared to the total market entry volume, together with Slovenia, Greece and Gaspool balancing zone. A significant difference between the MAM's volume traded for balancing purposes in NCG compared to Gaspool market areas can also be observed. 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 lowcal gas grid area compared to the high-cal 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. Furthermore, there is no domestic low-cal gas production

in NCG which leads to higher volumes with regard to conversion actions. 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 lack of a trading platform.

Italy and Ireland also present a value of the indicator slightly higher than other balancing zones (1.75 % and 1.54 % respectively). In Ireland, the increase in balancing actions in GY 2020/21 was due to Non-Routine Operations (NRO), which took place from April to August 2021 to adjust the network's pressure (i. e., to increase network pressures for the Beattock Station Splitting upgrade). In all other balancing zones, the value of indicator BAL.2.1 remains below 1%. Overall, results of indicator BAL.2.1 indicate that the volume of TSOs/MAM's balancing action is relatively small compared to the total Market volume. Comparing the level of TSO's balancing actions in GY 2020/21 with GY 2019/20 (Figure 7), it can be noted that in 12 balancing zones (BE-H, BE-L, DE-NCG, DE-GPL, ES, FR-TRF, GR, IE, JBZ – DK/SE, LT, SI, UK-GB and UK-NI) there has been an increase in the TSO/MAM's action volume from the previous gas year. A decreasing trend can be observed in BG-N, CZ, HR, IT, LV-EE and RO.

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-users 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

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

Aim: Proxy for actual balancing need of each balancing zone. **Granularity:** yearly volume; **Unit of yearly volume**¹⁴¹: $\sum_{d=1}^{365} MWh/d$

2.3.1 Analysis of results

Figure 8 shows a comparison of indicator BAL.2.1 versus indicator BAL.2.2.



Figure 8: Indicator BAL.2.1 versus BAL.2.2 for GY 2020/21

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-H, BE-L, BG-N, CZ, DE-GPL, DE-NCG, ES, FR-TRF, HU, NL, SI and UK-GB.

SK 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 DK/SE the difference between BAL.2.1 and BAL.2.1 is mainly due to the biogas production data which is registered as entry in the balance but is not part of the city gate exit.

In LT, indicator BAL.2.2 shows a slightly higher value compared to indicator BAL.2.1 as the market volume includes also transit flows from 3rd country to 3rd country (from Belarus to Kaliningrad region), together with cross-border flows towards adjacent balancing zone (Latvian-Estonian balancing zone).

¹⁴¹ For leap years 366 instead of 365.



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, PL-H and RO.

Annex VI provides a detailed comparison of the market entry volume versus the domestic end-users consumption volume, calculated based on data for GY 2020/21. With exception of DE-NCG, DE-GP, GR, LVEE and SI, the other the balancing zones have a ratio of TSO/ MAM's balancing action over domestic end-users consumption volume below 2 %. Similar evidence was found in the previous Effect Monitoring report when looking at data for GY 2017/18 and GY 2018/19¹⁴².

2.4 INDICATOR BAL.3: NET NUS IMBALANCES AS % OF MARKET VOLUME (PREVIOUSLY NAMED BAL.4)

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 **weighted average daily net imbalance volume over the daily market volume** (as defined in indicator BAL.2.1).

Contrary to the past report, the Market Volume is used instead of the Domestic end-users consumption to allow a more precise normalisation of the network users' imbalances volume¹⁴³.

Moreover, the methodology to calculate the indicator has been revisited. 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 are applied, the net network users' imbalances also consider the tolerated imbalance volume and the imbalances covered by the LFS (both Short and Long).

¹⁴² See chapter 2.2.4 of the ENTSOG BAL NC Effect Monitoring Report 2019.

¹⁴³ Network user's imbalance quantity is calculated based on all quantities attributed as an input or an off-take from the overall system. Considering the domestic end-users consumption volumes limits the calculation to only quantities allocated at exit points towards consumers directly connected to the transmission grid, city gates or distribution systems, based on the definition of domestic end-users consumption.

BAL.3: Net Network Users' imbalance volume as a share of Market volume (%)

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

\sum daily Market volume

Aim: net imbalance volume of network users should be minimised

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

In the past, indicator BAL.3 (previously named BAL.4) was used in combination with another indicator (previously named BAL.3) "Net TSO Balancing Volume as % of Domestic Consumption" to compare the normalised net imbalance volume of network users and the counteracting net balancing volume of the TSO.

In this edition of the Effect Monitoring report, this evaluation has been made by comparing the **average yearly net TSO actions volume** expressed in MWh/d vs. the **average net NUs' imbalance quantity** (as defined in chapter 2.4.1), expressed in MWh/d. This is to provide an observation of whether TSO's balancing action is (on an average) aligned with system imbalance direction (TSO BUYs when system is SHORT (i. e., the network user's off-takes for that gas day exceed its inputs for that gas day), TSO SELLs when system is LONG (i. e., the network user's inputs for that gas day exceed its off-takes for that gas day). Results are presented in Annex VII.

2.4.1 Analysis of results

Figure 9 below shows the results of indicator BAL.3 for GY 2020/21.



Figure 9: Indicator BAL.3 for GY 2020/21

Indicator BAL.3 has not been calculated for the Austrian balancing zone. 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 are fulfilled if the amount of a balance group imbalance is higher than 24 MWh, regardless of whether the BGR is long or short. The MAM does not balance long volumes against short volumes between balance groups, so all MAM's balancing actions are triggered by BGR imbalances. In most balancing zones, with exception for the Joint Balancing zone DK/SE, the Finnish balancing zone, Italy, Slovenia and Greece, indicator BAL.4 show that on average during the year, the residual imbalance level is equal or less than 2 % of the total market volume. In the Joint Balancing zone (DK/SE), it is noted that the level of imbalance volume is much higher than the TSO's action, which may be one of the reasons why the possibility of introducing WDOs has been considered by the Danish and Swedish TSOs operating in the JBZ.

In Finland, as explained in Chapter 2.1.1, the system imbalances are mainly due to difference between physical and commercial flows at Imatra entry point (entry point from 3rd country). A dedicated balancing account has been established (i. e., Imatra Balance Settlement Account). Through this account the TSO buys/sells gas that is needed to cover the differences between nominated and metered flows at the Imatra entry point.

No imbalances have occurred in Poland TGPS balancing zone.

The level of imbalances in Slovakia is extremely low compared to the market volume (0,01%), due to the significant volume of cross-border flows which represent more than 80% of the market volume (see Figure 13 in Annex VI). Moreover, at almost all

of the Slovakian interconnection points are subject to the allocation rule "allocated as nominated (99,88 % of the flow). 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.

Comparing the results of the indicator BAL.3 for GY 2020/21 with GY 2019/20, a decrease in the level of imbalances YoY can be observed in about half of the balancing zones under assessment (BE-H, BE-L, BG-N, BG-T, DE-GPL, FI, FR-TRF, GR, HR, HU, IT, PL-H, PL-L, RO and UK-NI). Conversely, a more significant increase of residual imbalances level is observed in the Joint Balancing Zone (DK/SE) and Slovenia, while in the other balancing zones overall the level of residual imbalances remained below the 2 % level, as in GY 2020/21.



Figure 10: BAL.3 GY 2019/20 versus GY 2020/21

2.5 INDICATOR BAL.4: AVERAGE NETWORK USERS' COST OF BEING BALANCED BY THE TSO (PREVIOUSLY BAL.5)

This indicator was introduced for the first time in the Second BAL NC Effect Monitoring Report 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 replicates the one used in the Third Effect Monitoring Report 2019. 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)

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

BAL 4(Short NUs) = (($\frac{\text{Average Daily Buy price}}{\text{Average Daily WAP}}$) - 1) * 100

Where:

Daily Sell price is calculated as follows:

((Daily Imbalances LONG * daily Marginal SELL price) + (Daily Imbalances LONG within tolerances * daily WAP) + (Daily Imbalances LONG within LFS * daily LFS SELL price))

((Daily Imbalances LONG) + (Daily Imbalances LONG within tolerances) + (Daily Imbalances LONG within LFS))

Daily Buy price is calculated as follows:

((Daily Imbalances SHORT * daily Marginal BUY price)

+ (Daily Imbalances SHORT within tolerances * daily WAP)

+ (Daily Imbalances SHORT within LFS * daily LFS BUY price))

((Daily Imbalances SHORT) + (Daily Imbalances SHORT within tolerances) + (Daily Imbalances SHORT within 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 a Linepack Flexibility Service (LFS) is offered by the TSO, the prices of the LFS have also been considered for the calculation¹⁴⁴. 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.5 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 in each balancing zone.

144 A LFS is offered in Czech Republic, France, the Netherlands and Portugal, however, in both Czech Republic and Portugal the LFS was offered free of charge in GY 2019/20 and GY 2020/21, according to the national balancing rules.

2.5.1 Analysis of the results

Figure 11 below represents the results of indicator BAL.4 based on data for GY 2020/21.



No data on daily marginal prices were available for Austria and the Netherlands¹⁴⁵.

Almost all countries have implemented daily imbalance charges, according to Art. 19-23 of the BAL NC, except Greece, Slovakia and UK-NI where an interim imbalance charge is applied (according to art. 49). Imbalance charges in the Greek and Slovak balancing zones are calculated based on the prices derived from balancing platform trades.

In Greece, it is noted that the deviation of the average daily sell prices from the daily WAP was higher than the deviation of the daily buy imbalance price (-24 % of the average WAP). Overall, BAL.5 for Greece shows the highest level of deviation from the WAP for both average buy and sell prices.

In UK-NI, in absence of a balancing platform, the imbalance charges are calculated based on the daily average price at the NBP (UK-GB market) which is used as a proxy for the market price.33.

In Ireland, some tolerances still exist for specific entry points¹⁴⁶. Moreover, due to low liquidity of the Irish market, in days of non-liquidity the price at the NBP (UK-GB market) is used as reference for determining the applicable prices for those specific gas days.

145 Details on methodology to determine the daily imbalance charges can be found in Annex II of this report.

146 Entry point from RNG sources (at the reference time of this report, a 25% tolerance applies only to Cush entry point).

Figure 11: BAL.4 GY 2020/21

In Bulgaria, Finland, Lithuania, Poland, Romania, Spain and Slovakia, the deviation of the average buy and sell prices from the WAP corresponds to the level of the applied small adjustment (see table 3).

Balancing zone	Level of the applied small adjustment at 1 October 2021
BeLux-H	SA causer = 3 %,
BeLux-L	SA helper = 0 % ¹⁴⁷
Bulgaria National Balancing Zone	8 %
Bulgaria Transit Balancing Zone	
Croatia	10 %
Czech Republic	from 2 % up to 5 % of WAP, depending on the value of the aggregate imbalance $^{\rm 148}$
Germany - NCG	2 %
Germany - Gaspool	
Greece	n/a
Finnish Balancing Zone	10 %
France – TRF	2.5 %
Hungary ¹⁴⁹	6 %
Ireland	Adjustment calculated according to applicable rules ¹⁵⁰ based on market liquidity
Italy ¹⁵¹	0.108 €/MWh
Joint Balancing Zone Denmark/Sweden	between 8 % and 10 % ¹⁵²
Latvian-Estonian balancing zone	marginal sell price (MSP) incentive factor value - 0.95; marginal buy price (MBP) incentive factor value - 1.10.
Lithuania	10 %
Poland H-gas balancing zone	10 %
Poland L-gas balancing zone	
Poland TGPS	
Portugal	2.5 %
Romania	10 %
Slovakia	7 %
Slovenia	10 %
Spain	3 %
UK-GB	The value of the small adjustment applied to determine the marginal prices is updated every year, according to national code ¹⁵³ .

Table 3: Small adjustment levels at 1 October 2021

Although not reflected in the calculation of the indicator BAL.4 it is observed a sharp increase in the market price (WAP) in Q3 of 2021 due to the surge in gas prices recorded (see Annex VIII). Since the indicator is calculated based on data for GY 2020/21, it takes account of the increase in prices observed in Q3 of 2021.

However, it does not take account of the further increase in prices observed in the current GY (i.e., GY 2021/22) because this is outside the period covered by this report.

¹⁴⁷ 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.

¹⁴⁸ The higher the aggregate imbalance the higher the price adjustment.

¹⁴⁹ The Hungarian Energy and Public Utilities Regulatory Office set the rate of the small adjustment level at 3% from 01.11.2021, instead of the previous 6 % having been applicable on 1 October 2021, to compensate for the impact of high unit prices.

¹⁵⁰ Link to the approved daily imbalance charge calculation methodology (art.20.2).

¹⁵¹ The value of the Small Adjustment in Italy has been equal 0.4% on average during Gas Year 2020/2021 ranging between 1% and 0.1% with WAP respectively of 10,8 and 86 Euro/MWh, with a decreasing small adjustment when gas prices are increasing.

¹⁵² The percentage is calculated based on alternative costs at storage and interconnection points, and takes into account the gas price.

¹⁵³ See latest update of the value of the small adjustment.

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 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, particularly in balancing zones that terminated the use of interim measures since the last monitoring report.
- Indicators BAL.2.1 and BAL.2.2 show that the level of TSO/MAM's balancing action volume remains below 1% for most balancing zones, signaling that that the percentage of TSOs/MAM's balancing action is overall relatively small compared to the total gas volume entering each balancing zone (BAL.2.1). Few exceptions where the level of indicator BAL.2.1 is higher than 1% are observed in NCG (5,31%), Slovenia (2,53%), Greece (2,43%), Gaspool (2,12%), Italy (1,75%) and Ireland (1,54%).
- 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's balancing action volume with the domestic end-users consumption (BAL.2.2).
- Assessing the level of network users' imbalances, indicator BAL.3 shows that in most balancing zones, the residual imbalance level was equal or less than 2 % of the total market volume, with the exception of the Joint Balancing zone (DK/SE) (6,29%), the Finnish balancing zone (3,03 %), Italy (2,99 %), Slovenia (2,67 %) and Greece (2,64%). Moreover, when comparing the level of net network users' residual imbalance volume with the net TSO/MAM's balancing actions volume, a correlation between net NUs imbalances and counteractive TSO/MAM net balancing action can be noted for most balancing zones, except in the Finnish balancing zone, Gaspool, the Joint Balancing Zone DK/SE, Lithuania, Poland H-gas, UK-GB and UK-NI. These cases have been further explored and results presented in Annex VII.
- From Indicator BAL.4, it is noted that in 10 bal-ancing zones (BG-N, BG-T, ES, FI, LT, PL-H, PL-L, PL-TGPS, RO, SI) 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. Some cases of higher deviance are noted in Croatia, Greece and Slovenia. In other balancing zones the deviation of the average buy and sell prices from the daily market price varies between 1 % and 16 % and -1 % and -24 % for buy and sell prices respectively. Almost all countries have implemented daily imbalance charges, according to Art. 19-23 of the BAL NC, except Greece, Slovakia and UK-NI where an interim imbalance charge is applied.

ANNEX IV: TOTAL NUMBER OF DAYS WHEN TSOS UNDERTOOK BALANCING ACTIONS





No balancing actions have been reported in Poland L-gas and TGPS balancing zones over the four GYs. Finland has not been included in the chart as it has been excluded from the analysis of indicator BAL.1 (see chapter 2.1.1).

154 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

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 zones 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 Greece, Poland (in L-gas and TGPS balancing zones) and Romania the market volumes include quantities delivered by NUs 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 13.

Figure 13: Yearly market volume versus Yearly market entry volume subject to balancing (GY 2020/21)



ANNEX VI: MARKET VOLUME VERSUS DOMESTIC END-USERS CONSUMPTION

Figure 14: Market volume¹⁵⁵ versus Domestic end-users consumption (TWh/y) for GY 2020/21

In AT, BE-H, BE-H, CZ, DE-GPL, DE-NCG, HU, NL, SK and UK-GB, the spread between Market volume and domestic-end user consumption volume is mainly due to cross-border flows.

For the BE-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 LT the Market volume includes also transit flow from 3rd country to 3rd country (from Belarus to Kaliningrad region) and transmission to Latvia via Kiemenai exit point.

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-users consumption, a characteristic of how the effect monitoring questionnaire was defined.

155 Includes also gas volume not subject to balancing.

ANNEX VII: CASE STUDIES FOR NET TSO BALANCING ACTION VS. NET NETWORK USER'S IMBALANCES

In order to assess whether it is possible to establish a correlation between the overall system end-ofday imbalance and the counteractive TSO/MAM balancing actions, the average net TSO action for each balancing zone has been compared with the average net network users' imbalances. The net TSO/MAM action is calculated on a daily basis by subtracting the gas volume purchased by the TSO/ MAM minus the gas volume sold. Positive value means that more gas has been bought than sold. The net network users' imbalance is obtained by subtracting the daily positive imbalance quantities (excess gas) minus the daily negative imbalance quantities (deficit gas). It should be noted that while the average net network user's imbalances is based on end-of-day balancing data, the net TSO actions volume is based on aggregated within-day values, therefore this comparison does not consider within-day settlement. Figure 15 below shows the result of such comparison using data for GY 2020/21.



Figure 15: Average daily net TSO/MAM balancing action (MWh/d) versus average daily net network users' imbalances (MWh/d) – GY 2020/21¹⁵⁶

A correlation between net NUs imbalances and counteractive TSO/MAM net action can be seen on average throughout the year in most balancing zones, except in the Gaspool balancing zone, the Joint Balancing Zone DK/SE, the Lithuanian balancing zone, Poland H-gas balancing zone UK-GB and in UK-NI. The case of the Joint Balancing Zone DK/SE, the Finnish balancing zone, the Gaspool balancing zone, Poland H-gas balancing zone, the Lithuanian balancing zone, UK-NI and UK-GB are presented as follows.

156 Left axis is purposely out of scale to capture different size of net TSO actions' volume/ net network user's imbalances.



Figure 16: Net TSO's action versus Net NU's imbalances in the Joint Balancing Zone DK/SE per Month (GY 2020/21)

Assessing the relation between net TSO's balancing action and net NU's residual imbalances in the Joint Balancing Zone over GY 2020/21, it can be deducted that the highest amount of NU's residual imbalances has been recorded in February 2021 and May 2021, while the cumulative amount of volume of net TSO's balancing actions was higher in Q4 2020. Explanation for this may be sought in national-specific market dynamics which are out of scope of this monitoring report. It should be noted that the total amount of days when the TSO has taken balancing actions during the year is fairly low (71 days over 365 days). Moreover, as detailed in the Implementation Monitoring section of this report, the Danish TSO and the Swedish TSO have submitted to their respective NRAs in June 2021 a recommendation document to introduce WDOs in the Joint Balancing Zone as of 1 October 2022. This decision was based on an estimate of increased imbalances within day once the Baltic Pipe becomes operational.



Figure 17: Net TSO's action versus Net NU's imbalances in the Finnish balancing zone per Month (GY 2020/21)

As described in the analysis of indicator BAL.1, system imbalances in the Finnish balancing zone are mainly due to daily difference between physical and commercial flows coming from Imatra entry point (entry point from 3rd country). A dedicated balancing account has been established (i. e., Imatra Balance Settlement Account) to compensate this imbalance and is used on a daily basis by the TSO to buy or sell gas that is needed to cover the differences between nominated and metered flows at the Imatra entry point. The highest residual imbalances, can be observed in November 2020, when the system was on average oversupplied, at the same time the TSO has bought an amount of gas which volume was almost equal, if higher than the net daily imbalance volume registered each gas day of that month.



Figure 18: Net TSO's action versus Net NU's imbalances in Gaspool balancing zone (GY 2020/21)

Observing the average monthly volume of net balancing actions undertaken by the German MAM in Gaspool balancing area versus the net NU's imbalances, it is noted that the system was on average undersupplied throughout GY 2020/21. In the German balancing system NU imbalances are only one source of balancing actions. The other equally impacting sources are NDM imbalances due to the use of Variant 2 and conversion measures. Therefore, a small correlation or even no correlation at all are expected when only taking NU imbalances into account – the degree of correlation may also vary by the ratio of the aforementioned sources. The level of the MAM's balancing action volume was much higher compared to the residual imbalances and, on average, more gas was sold than purchased. A higher level of MAM's actions can be seen in Q4 2020, where a correlation between balancing actions' direction and system direction is also observed.





In Poland H-gas balancing zone¹⁵⁷ the correlation between residual system imbalance and counter-

active TSO's balancing action is observed when assessing data on a daily and monthly basis.



Figure 20: Net TSO's action versus Net NU's imbalances in Lithuanian balancing zone (GY 2020/21)

In Lithuania, the apparent non correlation between average yearly TSO's net balancing action volume compared to average residual system imbalances is dependent on the high level of imbalances recorded in February 2021 and July 2021, when the system was on average oversupplied and undersupplied respectively. However, the average level of TSO's action and frequency of balancing actions remained fairly low over the gas year.

157 In Poland L-zone there was no TSO balancing action and the average net residual network user's imbalances volume was 2.4 MWh/d.



Figure 21: Net TSO's action versus Net NU's imbalances in UK-GB balancing zone (GY 2020/21)

Assessing the relation between average net TSO's balancing actions volume and average net network users' imbalances in UK-GB, a correlation can be observed on a monthly basis, as of February 2021. However, it is noted that on average the net

TSO's action volume was higher than the net NU's imbalances and that on average, more gas has been bough then sold by the TSO for balancing purposes over the months of February 2021 – May 2021.



Figure 22: Net TSO's action versus Net NU's imbalances in UK-NI balancing zone (GY 2020/21)

Observing the relation between average net Nus' imbalances and net TSO's action volume throughout GY 2020/21, it is noted an average increase net TSO's action volume compared to the net Nus' imbalances towards the end of the gas year, and a closer correlation between residual imbalances and counteractive TSO action. It is reminded that in UK-NI there is no trading platform and that all TSO actions are effectively undertaken via balancing services.

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



Figure 23: Daily WAP on trading platforms in selected balancing zones (GY 2020/21)

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