entsog

european network
of transmission system operators
for gas

BALANCING NETWORK CODE

Implementation and Effect Monitoring Report 2019

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PART 1

FOURTH ENTSOG MONITORING REPORT ON IMPLEMENTATION OF THE BALANCING NETWORK CODE

2019

EXECUTIVE SUMMARY

ENTSOG is required to monitor and analyse the implementation of the network codes and their effect on the harmonisation of applicable rules based on the provisions of Article 8(8) of Regulation (EC) no. 715/2009.

This is the Fourth Implementation Monitoring Report. The Third Implementation Monitoring Report was published in June 2018 and covered the Gas Year (GY) 2016/17. This report covers the Gas Years 2017/2018 and 2018/2019 and reflects the status of the BAL NC implementation at 1 October 2019. The main findings of the report will be reported to ACER and included in the ENTSOG Annual Report.

The **Implementation Monitoring Report** evaluates the BAL NC implementation status in 26 countries (AT, BE, BG, CZ, DE, DK, EE, ES, FR, GR, HU, HR, IE, IT, LU, LT, LV, NL, PL, PT, SE, SI, SK, RO, UK-GB and UK-NI[1]). Estonia, Finland, and Luxembourg held derogations at 1 October 2019 according to Article 49 of the Gas Directive. Notwithstanding the derogation, Estonia participated in this monitoring report on a voluntary basis, and Luxembourg provided information through the Belgian TSO (Fluxys). Cyprus and Malta do not have TSOs, therefore they were not contacted to take part in this monitoring report.

Main findings of the Report:

- At 1 October 2019, **almost all the countries fully applied the BAL NC provisions.** Only 5 countries (BG, GR, IE, SK and UK-NI) still have interim measures in place, approved by the National Regulatory Authorities. Compared to the previous Implementation Monitoring Report 2017, 6 countries (DE, LT, LV, PL, RO and SE) terminated the use of interim measures. The interim measures that remain in place are **planned to be removed** within the next five years, as soon as well functioning Trading Platforms are established, and market liquidity is developed.
- 2 **balancing zone mergers** have been accomplished during the two Gas Years covered in this report:
  - As of 1 November 2018, the French balancing zones PEG Nord and Trading Region South (TRS) merged into one balancing zone called Trading Region France (TRF) including one Virtual Trading Point (VTP) called PEG;
  - As of 1 April 2019, Denmark and Sweden introduced a Joint Balancing Zone (JBZ), where Sweden adopted the Danish balancing model.

1 For the scope of the Monitoring Report, UK is mentioned as UK-GB and UK-NI due to two different balancing regimes in place and therefore is considered as two different countries.

- **Future balancing zone mergers** are expected after 2019:
  - Estonia, Finland and Latvia plan to create a single gas market from 1 January 2020. Lithuania expects to join the single gas market area at a later stage;
  - Germany NCG and GP areas will merge into the Trading Hub Europe by 1 April 2022 at the latest;
  - Bulgaria is planning to merge the National balancing zone and the Transit balancing zone into one in 2020–2021.
- Regarding the development of **trading platforms and Short Term Standardised Products (STSPs)**, compared to the previous Implementation Monitoring Report 2017:
  - 2 countries (IE and RO) established a trading platform in GY 2017/18 and Sweden joined the Danish trading platform in 2019;
  - Greece, Ireland and Romania introduced STSPs in GY 2017/18;
  - Poland L-gas area started to offer STSPs in GY 2018/19;
  - Sweden adopted the STSPs offered in Denmark after the balancing zone merger in 2019.
- At 1 October 2019, although **balancing services** are still available in 14 countries (BG, CZ, DE, EE, GR, HR, LV, LT, PL-H, PT, SI, SK, UK-NI and UK-GB), only 12 countries (BG, CZ, DE, EE, GR, IE, LT, PL-H, PT, SK, SL and UK-NI) reported to have used balancing services in GY 2017/18, while 9 countries (BG, DE, EE, GR, LT, LV, PL-H, SK and UK-NI) used balancing services in GY 2018/19.
- Regarding the **nomination provisions**, all countries cooperated with the adjacent TSO(s) for the purpose of implementing nomination and re-nomination rules for bundled capacity products at interconnection points. Implementation status of the nomination rule for bundled capacity shows a significant improvement compared to GY 2016/17, where only 6 countries had reported to have cooperated with the adjacent TSO(s) for this purpose.
- Regarding the use of **daily imbalance charges**, 4 countries (BG, GR, SK and UK-NI) reported the application of an interim imbalance charge, while the others have already implemented daily imbalance charges. 20 countries (BE/LU, CZ, DE, DK/SE, EE, ES, FR, HR, HU, IE, IT, LV, LT, PL, PT, RO, SI and UK-GB) reported the use of the applicable price in compliance with Article 22(2) of the BAL NC. For 2 countries (AT and NL) this provision in not fully applicable.
- TSOs in 22 countries (BE/LU, BG, DE, EE, ES, FR, GR, HR, HU, IE, IT, LT, LV, NL, PL, PT, RO, SI, SK, UK-GB and UK-NI) have implemented financial security measures in accordance with the **neutrality arrangements** set by Article 31(3) of the BAL NC.
- At 1 October 2019, almost all the countries had implemented the **information provisions** of BAL NC:
  - Romania reported that the provisions of Articles 32 – 42 have been implemented with the exception of Article 36, which is still under discussion;
  - Lithuania implemented the information provisions in GY 2017/18;
  - Sweden merged with Denmark in the Joint Balancing Zone and applied the information provisions in place in Denmark.

1 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 measures[2].

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

- Malta and Cyprus hold derogations as long as they remain isolated markets without a gas transmission system.
- Luxembourg still holds a derogation according to Article 49(6) of the Gas Directive, which refers to its Article 9 on unbundling of transmission systems and TSOs.
- Finland and Estonia held derogations at 1 October 2019 according to Article 49(1) of the Gas Directive.

The BAL NC's implementation applies also to some specific interconnectors.[4]

In this Report ENTSOG continues to monitor the implementation of the BAL NC at the date of 1 October 2019, in accordance with Article 8 (8) of Regulation (EC) No 715/2009[5]. The results of this Report will also be published in the ENTSOG Annual Report 2019.

2 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.

3 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.

4 Due to the specific nature of interconnectors, BBL implemented the BAL network code on an "in=out" principle, whereby a network user's delivery nominations must equal its offtake nominations. As such, network users cannot be exposed to an imbalance and there is no need to take balancing actions. BBLC and both the Dutch and British NRAs have agreed that although the Network Code is applicable to BBLC, from a practical point of view BBLC does not have to apply the Balancing requirements dealing with operational balancing, daily imbalance charges, within-day obligations, neutrality arrangements, linepack flexibility services and interim measures.

5 Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005.

2 EVALUATION OF RESPONSES TO QUESTIONNAIRE

ENTSOG sent a questionnaire to monitor the implementation status of BAL NC to TSOs' representatives of the following 26 EU countries[6] (AT, BE, BG, CZ, DE, DK, EE, ES, FR, GR, HR, HU, IE, IT, LT, LU, LV, NL, PL, PT, RO, SE, SL, SK, UK-GB, UK-NI) where the BAL NC applies. Estonia implemented BAL NC and submitted data on a voluntary basis, whilst Luxembourg, which is still under derogation, provided information through the Belgian TSO (Fluxys). Some TSOs indicated that their responses to the questionnaire were provided in cooperation with their respective NRA.

6 UK-GB and UK-NI are counted separately as two different TSOs operates in the two different balancing zones and the two areas are regulated by different NRAs.

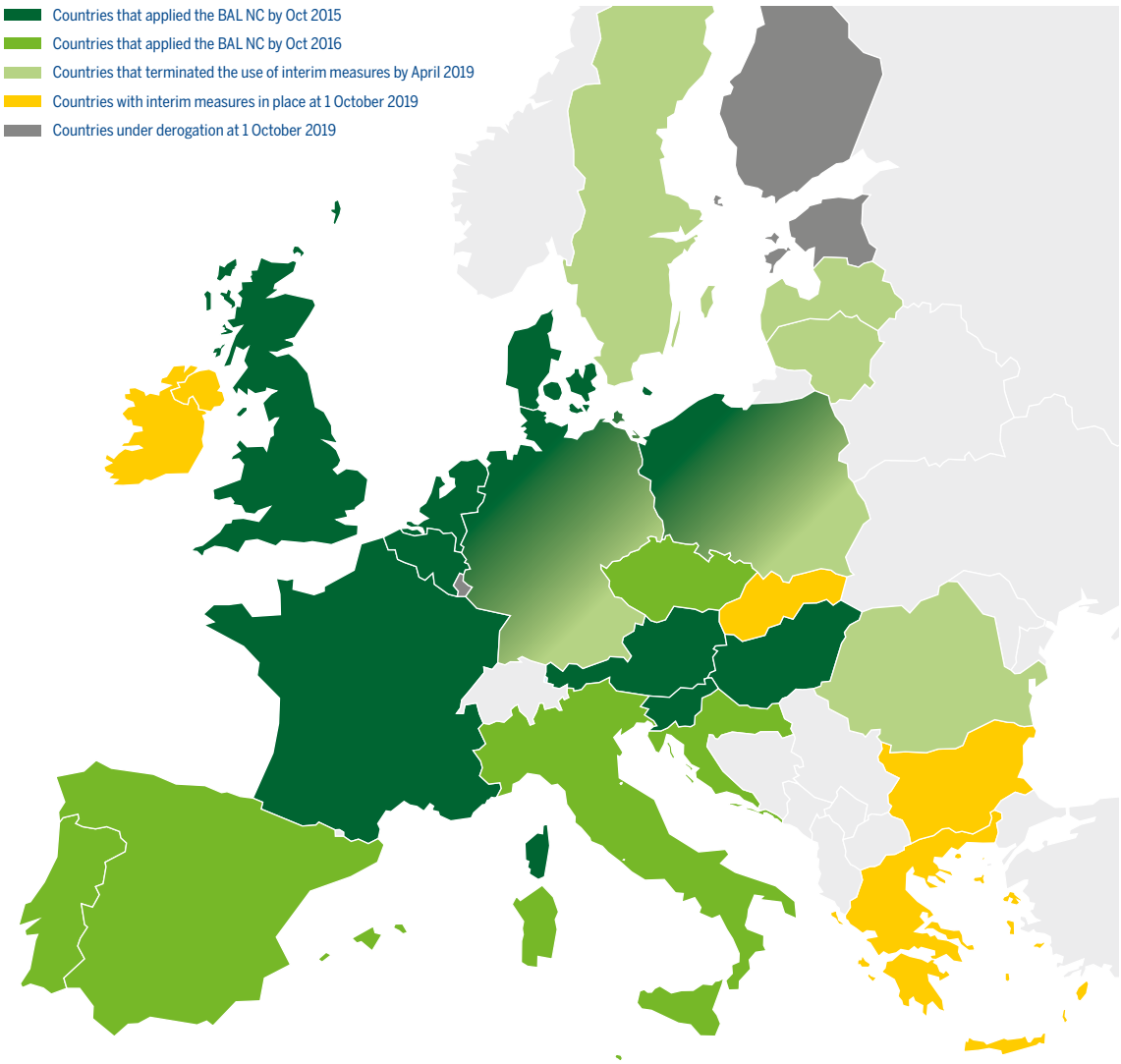
Data have been gathered from these 26 countries and 28 balancing zones. Map 1 shows the existing balancing zones in EU at the date of 1 October 2019. Further details are provided in Annex II.

* Finland and Estonia under derogation at October 2019
* BBL is part of the TTF market area. GTS and BBLC have a joint enty/exit system, but with two difference balancing regimes.

Map 1. EU Balancing Zones and related VTPs at 1 October 2019

The Implementation Monitoring questionnaire covered the status of the BAL NC implementation during Gas Years 2017/2018 and 2018/2019. Where relevant, and if still applicable, inputs provided in the previous questionnaire for GY 2016/2017 were also taken into consideration. Country-specific comments and explanations are reported where relevant. More detailed information provided by the TSOs for each country is shown in the Annexes to the report.

For 10 countries (AT, BE/LU, DE, DK, FR, HU, NL, SI, UK-GB) the BAL NC was fully applicable by 1 October 2015 and for 5 countries (CZ, ES, IT, HR, PT) by 1 October 2016 as approved by the NRA. Compared to the previous Implementation Monitoring Report 2017, 6 countries (DE, LT, LV, PL, RO and SE) terminated the use of interim measures and are now required to fully apply the BAL NC. At the date of 1 October 2019, interim measures are still in place in 5 countries (BG, GR, IE, SK and UK-NI). Map 2 shows the implementation status of the BAL NC at 1 October 2019.



* Finland and Estonia under derogation at October 2019
** The BAL NC was applicable in PL-H and DE already in 2015. However, in DE a balancing platform was used until 1 January 2018, while PL-L and PL-TGPS terminated the use of interim measures in April 2019.

Map 2. BAL NC Implementation status at the date of 1 October 2019

2.1 MAIN UPDATES COMPARED TO THE LAST REPORT

Some countries indicated to have updated their BAL NC implementation status, compared to the previous Implementation Monitoring Report.

Country	GY 2017/18	GY 2018/19
Austria		◢ Consultation for a further development and redesign of the Austrian gas balancing system[7], including within-day-obligations, was initiated in 2018. Major objectives are the establishment of an integrated and central balancing of transmission and distribution level based on a model which contributes to a further reduction of contractual and operational complexity.
Croatia	◢ Establishment of a trading platform and start of offering Short Term Standardised Products from 1 April 2017	
Germany		◢ Termination of interim measures (balancing platform) as of 1 January 2018 ◢ Introduction of the "Short-Term Balancing Product (STB)" as a non-standardised measure for balancing actions in both the GASPOOL and the NCG Market Areas.
Greece	◢ Implementation of Balancing Platform ◢ Implementation of VTP and Trade Notifications ◢ Implementation of revised Imbalance Price calculation (based on Trades on Balancing Platform instead of administered Price) ◢ Reduction of applied tolerance limits (from 10 % to 3 %)	◢ Removal of tolerances as of 1 January 2019
France		◢ Merger of PEG Nord balancing zone and Trading Region South (TRS) in one balancing zone (Trading region France-TRF)
Ireland		◢ Termination of (imbalance charge as of 1 April 2019)
Latvia		◢ Termination of interim measures as of October 2018 ◢ Removal of incentive multipliers for balancing prices and adaptation of balancing charges calculation according to BAL NC
Lithuania		◢ Termination of interim measures
Netherlands		◢ Improvement of neutrality arrangements due to a fraud case registered at the end of 2018. GTS, in cooperation with the NRA, is in the process of developing a code change to explicitly implement the neutrality principle with respect to default of payment. ◢ Establishment of the TTF Trading Zone by GTS and BBL (one trading region with two different balancing regimes).
Poland		◢ Termination of interim measures as of 1 April 2019 in all 3 balancing zones

7 https://www.e-control.at/en/marktteilnehmer/gas/weiterentwicklung-bilanzierungsmodell

Country	GY 2017/18	GY 2018/19
Romania	◢ Termination of interim measures	
Slovakia		◢ Approval from the NRA of the continuation of interim measures
Sweden		◢ Termination of interim measures ◢ Establishment of the Joint Balancing Zone with Denmark as of 1 April 2019
UK-NI	◢ Forecasting Party arrangements became fully operational on 1 October 2017 ◢ Revised balancing contracts to encourage more participants operational from 1 October 2018.	◢ Consultation on frequency of information provision, followed up by the production of a Forecasting Accuracy Report, reporting a high level of NDM forecasting accuracy ◢ Lack of agreement for creation of a trading platform. As follow up, the TSOs and NRA are considering the feasibility of trading at the Adjacent Balancing Zones (NBP and IBP).

Key challenges of BAL NC implementation

In the Implementation Monitoring Questionnaire, it was asked to the TSOs of the monitored countries to indicate whether any challenges were encountered during and/or after the BAL NC implementation.

- Ireland indicated that the main challenges incurred during the implementation phase were achieving a consensus amongst shippers in relation to the removal of tolerances, the uncertainty of the liquidity of the established trading platform and difficulties in overcoming physical balancing issues[8].
- Northern Ireland reported that challenges have been faced in the implementation of some BAL NC provisions (i.e. trading platforms) due to market illiquidity, scarcity of gas supply sources and limited number of active shippers.
- Poland indicated as challenges existing in the Low-methane balancing Area (PL-L) during the BAL NC implementation: all gas sources belonging to one producer, lack of connection points with adjacent balancing areas and no possibility to convert gas. After the implementation, the main remaining challenges identified were lack of shippers' interest in activity on the trading platform and absence of OTC transaction since VTP creation.
- UK-GB reported as main challenges incurred during the BAL NC implementation:
  - The adaptation of the gas day which changed from 06:00–06:00 in GB to 05:00–05:00;
  - The implementation of new arrangements regarding Daily Nomination and Re-nominations at IPs;
  - The implementation of daily imbalance charge methodology.

8 Concerns of Power Generators as the Irish Electricity Market is a centrally dispatched model where Gas stations can be re-dispatched up or down during a time period where nominations cannot be made to GNI (between 02:00 and 05:00).

2.2 MERGE OF BALANCING ZONES

The first cross-border merger of balancing zones in the European market happened in 2015 when Belgium and Luxembourg merged the Luxembourg and Belgian gas markets in one cross-border integrated gas market, the BeLux area. The BeLux area is an entry-exit system with a notional trading point "Zeebrugge Trading Point (ZTP)" with no obligation for the shippers to book capacity between Belgium and Luxembourg (and vice versa). The BeLux area consists of two entry/exit zones:

- The H-zone, which corresponds to the physical H-calorific gas grid of Creos Luxembourg and of the H-calorific gas grid of Fluxys Belgium;
- The L-zone, which corresponds to the physical L-calorific gas grid of Fluxys Belgium.

Since the last Implementation Monitoring Report, the following balancing zone mergers have been accomplished:

- As of 1 November 2018, the French balancing zones PEG Nord and Trading Region South (TRS) were merged into one balancing zone called Trading Region France (TRF) including one VTP called PEG.
- On 1 April 2019 Energinet and Swedegas completed the cross-border merger of the balancing markets in Denmark and Sweden, to create the Joint Balancing Zone (JBZ). To realise this, Sweden adopted the Danish balancing regime.

At the date of 1 October 2019, the following balancing zone mergers were in progress:

- Estonia, Finland and Latvia were in the process of creating a single entry-exit system, including a single VTP and a single balancing zone. Lithuania expects to join the single gas market area at a later stage.
- The amended German Gas Network Access Regulation of 2017 foresees a merger of the two existing market areas by 1 April 2022 at the latest. It will be a full merger within Germany and the name of the new market area will be "Trading Hub Europe".
- Bulgaria is planning to merge the National balancing zone and the Transit balancing zone into one in 2020–2021 after finalisation of ongoing infrastructure projects.

2.3 BALANCING SYSTEM

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

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. To do so, gas transfer between two balancing portfolios within one balancing zone shall be done by disposing and acquiring trade notifications submitted to the TSO in respect of the gas day.

Trade Notifications

The maximum allowed time to process the trade notification set by the BAL NC is up to two hours.

Table 1 indicates the lead-time for trade notifications applied in each country/balancing zone:

Table 1. Lead time to submit trade notifications applied at the date of 1 October 2019

Lead-time of submitted trade notification	Countries
≤ 30 min	BE/LU, CZ, DE, ES, FR, GR, IE, IT, LT, NL, PT, RO, UK-NI
30 min ≤ t ≤ 2 hours	AT[9], BG, DK/SE[10], EE, HR, LV[11], PL, SI, SK[12], UK-GB,
> 2 hours	HU[13]

When trade notification quantities are not equal, the TSO shall allocate either the lower notification quantities or reject both trade notifications. The applicable rule is defined by the TSO in the transport contract or other legally binding agreement (see Table 2).

Table 2. Allocation rule in case of mismatches of notification quantities applied at the date of 1 October 2019

Allocation rules of quantities in case of mismatches of trade notifications	Countries
Lesser rule	AT, BE/LU, BG, CZ, DE, DK/ SE, EE, FR[14], GR, HU, IT[15], LV, NL, PL, PT, RO SK,
Reject both trade notification	ES, HR, IE, SI, UK-GB, UK-NI,FR
No allocation rule	LT[16]

Trading Platform, trading in Adjacent Zones and Cross-border cooperation

In order to allow both the network user and the TSO to procure gas via STSPs, a trading platform shall be established following the provisions of Article 10 of BAL NC. Where the TSO cannot ensure that a trading platform can be established in compliance with the criteria of transparency, non-discriminatory access, equality, anonymity, detailed and precise information provision, it shall implement a balancing platform[17].

At the date of 1 October 2019, 20 countries have established a trading platform: 18 countries (AT[18], BE/LU, CZ, DE, DK/SE, ES, FR, HR, HU, IT, LT, LV, NL(GTS)[19], PL, SI, UK-GB) established a trading platform already in GY 2016/17, Ireland and Romania in GY 2017/18.

9 At the same time the lead time for storage nominations was reduced to one hour.

10 Sweden and Denmark created the Joint Balancing Zone and Sweden adapted the lead times to the Danish balancing regime.

11 In Latvia 20 min – 2 h is the lead time approved by the NRA, however in reality it is 5 minutes. No amendments to rules done, due the fact, that there will be new rules from 2020 1 January, for common balancing zone of Estonia-Latvia.

12 Trade notifications are processed together with the nominations and the same lead-time is applied

13 Hungary reported that the lead time is adjusted to the next nomination cycle and it is not planned to be reduced. No further details were provided on the applied mechanism.

14 In France, in case of mismatch of notification quantities at 2 pm day-ahead, the lesser rule is applied. If further mismatches of re-notified quantities occur, the last confirmed quantity is kept.

15 In Italy, in case of mismatch of notification quantities of OTC trading both trade notifications are rejected, while in case of mismatch of notification quantities of a trade on a gas exchange the lesser rule is applied. Curtailments or rejections are also possible in case of lacking financial guarantees coverage.

16 In Lithuania it is established, that only one party has to notify the trades. Notifications has to be submitted only by one counterparty – by seller, the buyer does not submit information on the quantities purchased. Mismatches in such situations is not possible and no allocation rule is defined. Only NRA pre-registered seller may provide information on VTP trades.

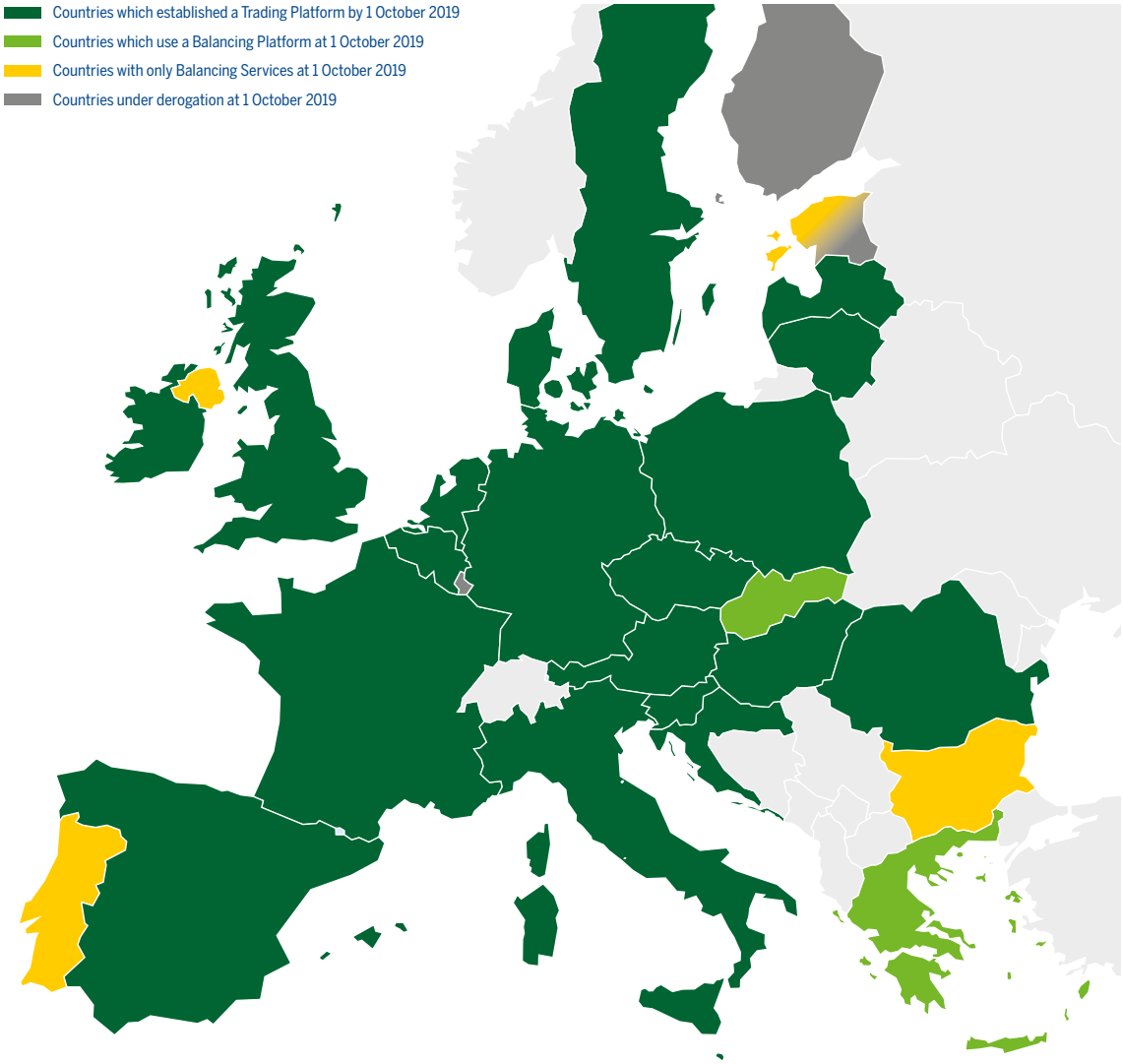
17 A balancing platform is a trading platform where the TSO is a trading participant to all trades, as set out in Article 47 of BAL NC.

18 Austria started in 2019 the merger of between two trading platforms (Powernext and EEX). This will enable to trade STSPs at the EEX-platform only. The merge will be effective from 1 January 2020.

19 For BBL trading platform is not applicable

- Greece is currently in the process of implementing a trading platform for the Greek Gas Market and the estimated time of completion is by the end of 2020.
- Portugal stated that the implementation of the trading platform is still in progress. According to the NRA's decision, the designated Market Operator in Spain (MIBGAS) operating at the Spanish VTP (PVB), shall be the future Market Operator for the Portuguese VTP, but the process is delayed due to administrative and legal hindrances.
- Poland implemented a trading platform in the L-gas area in GY 2018/19.
- Sweden joined the Danish trading platform in 2019.
- Due to the derogation in place in Estonia until 1 January 2020, not all the Articles of the BAL NC were implemented.
- Bulgaria, Slovakia and UK-NI apply interim measures.

Map 3 shows the status of trading/balancing platform implementation at the date of 1 October 2019.



* Finland and Estonia under derogation at 1 October 2019
** Poland H-gas and TGPS areas already established a trading platform by 1 Oct 2017. Poland-L gas area established a trading platform in 2019.

Map 3. Implementation status of trading/balancing platforms at the date of 1 October 2019

Short-Term Standardised Products

Short-Term Standardised Products (STSPs) are traded on the trading platform and are defined in Article 7 of the BAL NC as:

- Title products: transfer of a title to gas at the VTP;
- Locational products: transfer of a title to gas at the defined point that requires the originating trading participant to make (re)nomination(s) at specified point(s);
- Temporal products: transfer of a title to gas at the VTP applied during a certain time period within the gas day;
- Temporal locational products: transfer of a title to gas at the VTP that requires the network user to make (re)nomination(s) at specified point(s), during a certain time period within the gas day.

Compared to the previous Implementation Monitoring Report, Greece, Ireland and Romania introduced STSPs in GY 2017/18. Poland L-gas area started to offer STSPs in GY 2018/19 and Sweden adopted the STSPs offered in Denmark after the balancing zones merger in 2019.

At the date of 1 October 2019, 4 countries (EE, PT, SK and UK-NI) still do not offer STSPs due to lack of market liquidity.

- Northern Ireland reported that although a trading platform has been established in October 2015 for trades via a VTP, there is still not sufficient liquidity due to the size and limitations of the market to trade STSPs.
- Slovakia reported that STSPs are available on the established balancing platform.

According to Article 9 (3) of BAL NC, TSOs may seek NRA approval for trading STSPs in adjacent zones as an alternative to trading title products or locational products in their own balancing zone. As already identified in the last implementation report, 4 countries (CZ, DE, PL and SK) have implemented this option:

- In Germany, trades are possible with the neighbouring Dutch trading TTF VTP. As an alternative to trading at the TTF, quality specific title products for L-gas and H-gas were introduced at the trading platforms PEGAS[20].
- Poland reported that the NRA approved the TSO's request to trade within the adjacent German balancing zone GASPOOL on the EEX trading platform (European Energy Exchange AG), and within the adjacent Czech balancing zone on the OTE trading platform (balancing actions in PL-H balancing zone) and on TGE trading platform (balancing actions in PL-TGPS balancing zone).

Merit order

When deciding upon the appropriate balancing actions, TSOs, shall prioritise the use of title products where and to the extent appropriate over any other available STSPs. In case title products are not offered on the market, according to the provisions of the BAL NC, the use of the other STSPs shall follow the so-called "merit order" (locational products, temporal products, temporal locational products, balancing services).

Compared to the previous report, almost all the countries, except Estonia and UK-GB, reported to follow the merit order according to Article 9 of BAL NC. In the Netherlands no merit order is applicable for BBL due to the in-out principle on the interconnector.

Some countries reported updates in the use of merit order compared to the previous Implementation Monitoring Report:

- Germany (DE-GASPOOL/NCG) reported that a new "Non-standardised" Service called "Short-Term Balancing Service" was introduced on January 1, 2018 as a result of merging the features of the former "Demand Side Management product and "Long-Term-Option (LTO)". The LTO-product was adjusted as well to integrate a demand side management component. This product is procured in those situations in which standardised products do not provide the response necessary and further short-term standardised products are unavailable;
- France replaced the "within-day TRS End of Day" product with "within-day TRF End of Day" product, following the new established balancing zone;
- Poland terminated the use of balancing platform (and the related offer of STSPs) in all the three areas in 2019.

20 PEGAS is the pan-European gas trading platform of Powernext. Powernext SAS and Central European Gas Hub AG (CEGH) have established the PEGAS CEGH Gas Exchange Services GmbH (PCG) in 2016 as joint subsidiary, which supports the Austrian, Czech and CEE gas markets.

Three countries (DE, HU and NL (GTS)) reported to have procured STSPs other than title products in GY 2018/19. In these countries it was reported that temporal or temporal locational products have been used, only when it was more economic and efficient than purchasing and selling title products. In particular:

- The Netherlands considered that temporal products are needed for the instantaneous effect and locational products would have an adverse effect on the liquidity of the product range;
- Romania reported that the procurement of STSPs other than title products by the TSO is not needed, since the residual imbalance of the network is covered by the linepack.

Annex III includes a list of all the products offered based on the merit order, according to Article 9 of the BAL NC.

2.4 OPERATIONAL BALANCING

2.4.1 BALANCING SERVICES

According to provisions of the BAL NC, the transmission system operators are entitled to procure balancing services for those situations in which STSPs will not or are not likely to provide the response necessary to keep the transmission network within its operational limits or in the absence of liquidity of trade in STSPs.

At 1 October 2019, balancing services are available in 15 countries (BG, CZ, DE, EE, GR, HR, IE, LV, LT, PL-H, PT, SI, SK, UK-NI and UK-GB), although only 12 countries (BG, CZ, DE, EE, GR, IE, LT, PL-H, PT, SK, SL and UK-NI) reported to have used balancing services in GY 2017/18 and 9 countries (BG, DE, EE, GR, LT, LV, PL-H, SK and UK-NI) in GY 2018/19.

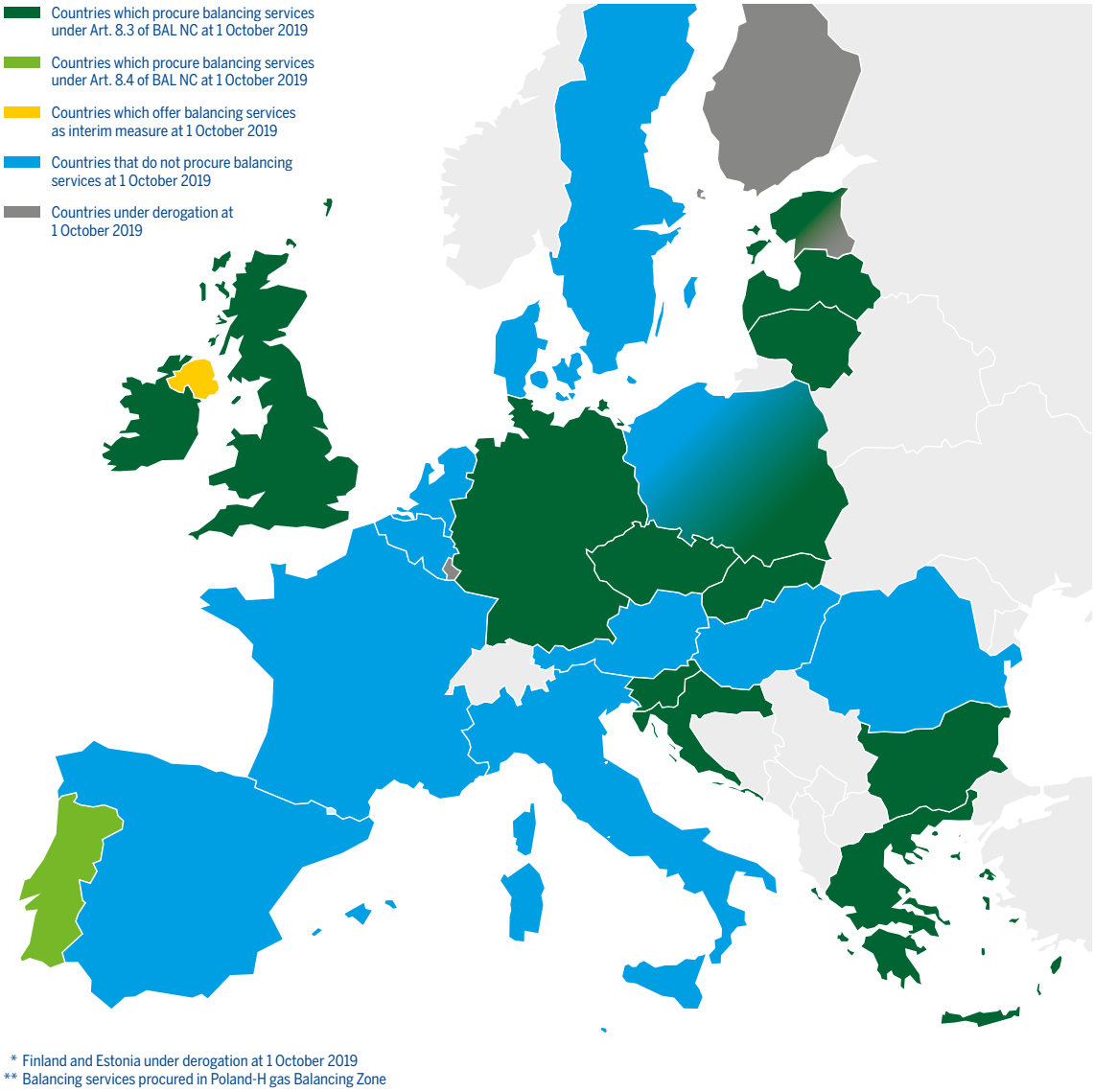
- Compared to the previous report, Romania terminated the procurement of balancing services in GY 2017/18.
- Ireland did not procure balancing services since commencing trading on the trading platform in May 2018 and has decided not to renew the pre-existing residual Balancing Gas Contracts after their expiration date (31 December 2020).
- UK-GB started the procurement of balancing services in GY 2017/18.

Most of the countries reported that balancing services are procured either because of the absence of liquidity or because STSPs were not providing the necessary response to keep the transmission network within its operational limits.

Other reasons for the use of balancing services were indicated by some countries. For instance, Germany stated that Long-Term Options can be used in case of a locational balancing demand if no short-term offers within the respective location are available. The Product "Short-Term Balancing Services (STBS)" can be used in case of locational balancing demand and allows industrial end consumers to offer their demand-side flexibility. It does so by allowing more flexible product parameters with respect to e.g. lead-times and lot sizes. Both LTO and STBS are tendered and contracted for security of supply reasons.

13 countries (BG, CZ, DE, EE, GR, HR, IE, LV, LT, PL-H, SI, SK and UK-BG) reported to have procured balancing services in a market-based manner, through a transparent and non-discriminatory public tender procedure in accordance with Article 8.3 of BAL NC. Only Portugal reported the use of a transparent and non- discriminatory procedure other than a public tender, under approval of the NRA, following Article 8.4 of BAL NC.

Map 4 hereafter gives an overview of the countries where balancing services are procured according to Article 8 of BAL NC at the date of 1 October 2019.



Map 4. Balancing services procured at the date of 1 October 2019

The TSOs shall review the use of balancing services annually in order to assess whether available STSPs would better meet the transmission system operator's operational requirements and whether the use of balancing services could be reduced for the next year. 6 countries (BG, CZ, LT, PL-H, SK and UK-NI) confirmed having done this review as of 1 October 2019.

- Germany stated that the annual review of balancing services was submitted to the NRA in November 2019 and published on both MAM's websites.
- Italy reported that the use of balancing services is foreseen by the national network code however these have never been used.

2.5 NOMINATIONS

BAL NC sets out basic nomination and re-nomination rules for TSOs and shippers to follow when nominating and re-nominating gas quantities. The gas quantity to be specified in the nomination and re- nomination shall be expressed either in kWh/d for daily nominations and re-nominations or in kWh/h for hourly nominations and re-nominations.

The information received by TSOs from a network user's gas (re)nominations is essential to the safe and efficient balancing of the network. Moreover, (re)nominations enable TSOs to also predict where and to what extent gas imbalances are likely to occur.

2.5.1 NOMINATIONS AT INTERCONNECTION POINTS

Where TSOs offer bundled capacities at IPs, the nomination and re-nomination provisions according to Article 12 (3) of the BAL NC shall also apply to single nominations and re-nominations for bundled capacity products.

Most of the countries, except Greece, Latvia and Lithuania, have a single nomination established at all IPs.

- In the case of Latvia and Lithuania, the single nomination rule is not mandatory because an implicit allocation mechanism has been implemented.
- Following the balancing zones merger between Denmark and Sweden there is no longer an IP between the two countries. Sweden is not connected to countries other than Denmark.

Cooperation between adjacent TSOs

All countries cooperated with the adjacent TSO(s) for the purpose of implementing nomination and re-nomination rules for bundled capacity products at IPs. Implementation status of the nomination rule shows a significant improvement compared to GY 2016/17, where only 6 countries had reported to have cooperated with the adjacent TSO(s) for this purpose.

- Croatia implemented nomination and re-nomination rules for bundled capacity products at IPs in GY 2017/18.
- Greece and Bulgaria are in the process of implementing single-sided nominations at their IP. The relevant interconnection agreement is under revision. Greece has started the implementation of single-sided nominations processes in its IT systems.
- In Slovakia, bundled and unbundled capacities are processed in the same way and the rules are defined in the interconnection agreements.

In absence of a valid nomination sent by the network user before the nomination deadline, the respective TSOs shall apply the agreed default nomination rule. Mainly two default rules ("lesser rule" and "zero") are reported as the applicable default nomination rule (see Table 3).

Table 3. Default nomination rule applicable at the date of 1 October 2019

Default nomination rule	Countries
Lesser rule	AT[21], BE/LU, DK/SE, HR, IE, LT, SI, UK-NI, IT
Zero	AT[22], BG, CZ[23], DE, EE, ES, FR, GR[24], HU, LV, NL[25], PL[26], PT[27],RO, UK-GB
Other	SK[28]

21 If a balance group representative (BGR) does not send a nomination, the value is set to zero. If the BGR sends a nomination and there is a difference in the matching process, the lesser rule is valid.

22 See footnote 21

23 In case of absence of valid nomination the "zero rule" is applied, and in case of mismatch with the respective nomination obtained by the neighbouring TSO the "lesser rule" is applied.

24 In case a network user does not submit a daily nomination, or it has been rejected by the TSO, the network user's nomination shall be equal to zero. For the IP with Bulgaria: In case a network user does not submit a daily nomination or re-nomination, or it has been rejected by the TSO, the network user nomination shall be considered equal to the last Confirmed Quantity, up to the booked capacity for that network user.

25 If, at the nomination deadline, there is no valid nomination for a network user with both Neighbouring Network Operators (NNOs), then this network user will not be part of the matching process on that particular interconnection point. If the initiating NNO received no valid nomination, the same counts. If the initiating NNO did receive a valid nomination, and the matching NNO did not, the matching NNO will either not send a confirmation or confirm zero.

26 In Poland H-area and TGPS area the default nomination rule applicable in the absence of a valid nomination is that nomination is a zero for entire gas day. However, this rule was not agreed between the adjacent TSOs.

27 Portugal and Spain have agreed on the default rule "zero" at VIP Ibérico, in case there is no valid nomination from a network user. This is different from the mismatching case, where the defined rule is the "lesser rule.

28 Slovakia reported that a default nomination rule with the adjacent TSO has been agreed. However, it was not reported the agreed rule.

According to Article 16 of BAL NC, where daily and hourly nominations and re-nominations co-exist at an IP, the TSO or the NRA may consult the stakeholders for the purpose of identifying whether harmonised nominations and re-nominations should be submitted at both sides of this IP.

14 countries (AT, BE/LU, CZ, DE-NCG, EE, FR, HR, HU, IT, NL, PL-H, SK and UK-GB) reported that hourly and daily nomination regimes co-exist at the two sides of the IP(s).

2.5.2 NOMINATION AND RE-NOMINATION PROCEDURE AT POINTS OTHER THAN IPs

Nomination and re-nomination rules at points other than IPs are possible according to Article 18 of the BAL NC. In this case, the points where nomination and re-nomination rules are required shall be decided by the NRA, after consulting the TSO. 18 countries (AT, BE/LU, BG, CZ, DE, ES, FR, GR, HR, IT, LV, LT, NL(GTS), PL, PT, RO and SI) have implemented nomination and re-nomination procedures mostly at storage points and consumers directly connected to the grid (Table 4).

Table 4. Points other than IPs where nomination and re-nomination procedure are required according to Article 18

Type of point	Countries
Storage points	AT, CZ, DE, ES, FR, HR, IT, LV, NL(GTS), PL-H, PT, RO
LNG points	BE, ES, FR, GR, IT, HR, LT, NL(GTS), PL-H, PT
End consumers points	AT, BE, CZ, FR, GR, HR, IT, LT, NL(GTS), PL-H, PL-L, PT[29], RO, SI
Non-EU points	ES, IT, LV, PL-H, PL-TGPS, FR
Production points	AT, IE[30], PL-H, PL-L
Domestic points	BG, IE[31], LT,
Other	AT[32], ES[33], FR, GR, HR, IT[34], NL(GTS)[35], RO[36]

29 High-pressure supplied end consumer points.

30 Production points at Inch and Ballanaboy into the Transmission System

31 Domestic Biogas production facilities into the Transmission System or Distribution System

32 Biogas, virtual end consumer points.

33 The provisions relating to nomination processes apply to all entry points to transmission network, included VIPs

34 Indigenous production (natural gas and biomethane) entry, delivery to other transmission networks, redelivery points (distribution, final customers)

35 All network points except the ones to DSO-networks

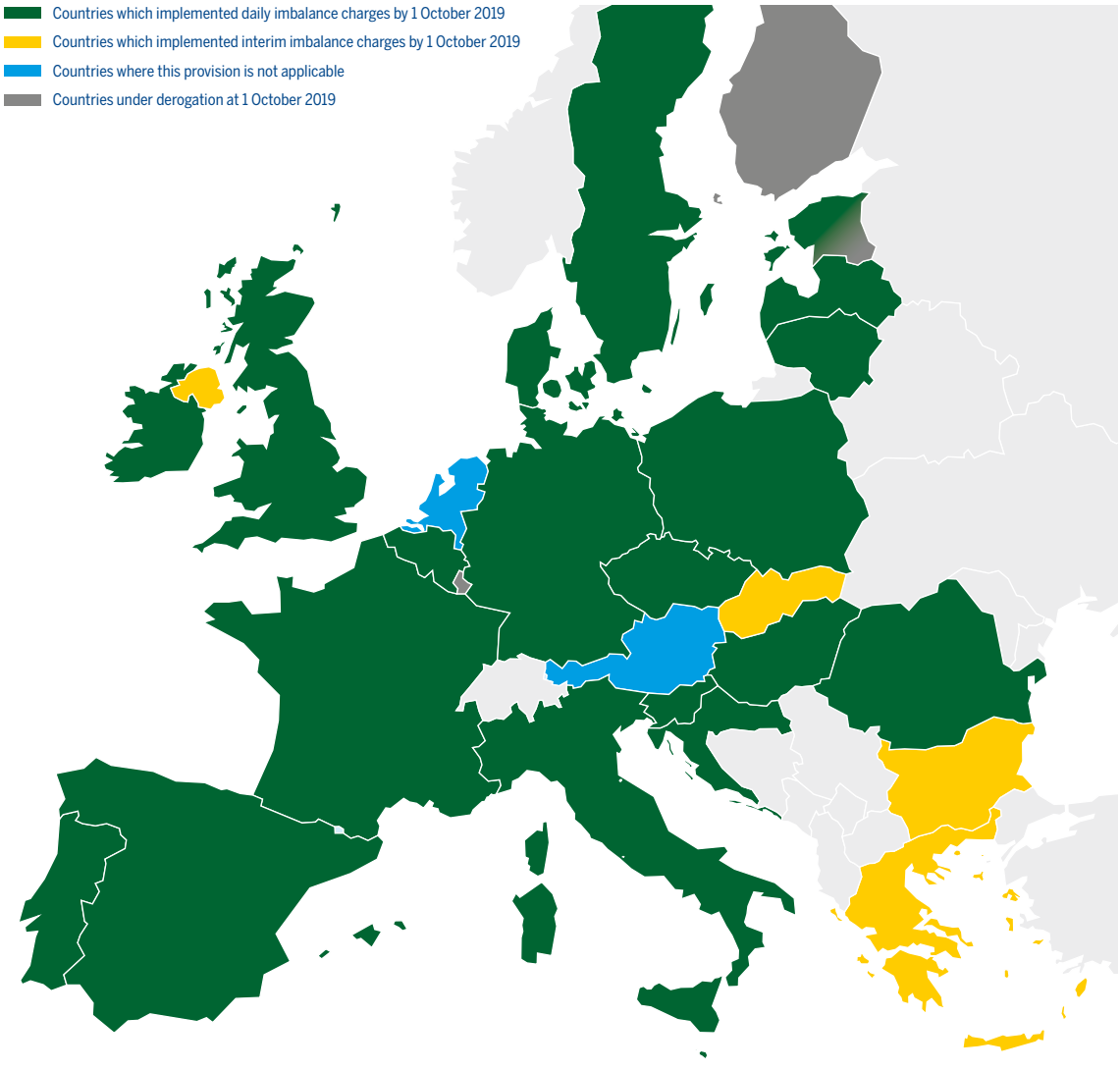
36 The entry points in the NTS from the production points and exit points from the NTS towards the distribution systems

2.6 DAILY IMBALANCE CHARGES

The daily imbalance charge mechanism is intended to incentivise network users to balance their portfolios over the gas day. Out of balance, network users are bound to pay or are entitled to receive (as appropriate) daily imbalance charges depending on their balancing position on a particular gas day. The daily imbalance charge is a cost-reflective mechanism and shall take account of the prices associated with transmission system operator's balancing actions, if any, and small adjustment.

This provision of BAL NC should have been implemented by all countries by 1 October 2016, except in those countries that applied for interim imbalance charge.

Map 5 shows the implementation of daily imbalance charge methodology at the date of 1 October 2019. At 1 October 2019, 4 countries (BG, GR, SK and UK-NI) reported the implementation of an interim imbalance charge. Ireland implemented daily imbalance charge as of 1 April 2019.



* Finland and Estonia under derogation at 1 October 2019
** Daily imbalance charge implemented in Poland-H Balancing Zone by 2016, in Poland L and Poland-TGPS Balancing Zones by April 2019

Map 5. Implementation of daily imbalance charge vs. interim imbalance charge

According to the BAL NC provisions, the daily imbalance charge calculation methodology shall define the calculation of the daily imbalance quantity, the derivation of the applicable price and any other necessary parameter. The daily imbalance quantity is defined as the difference between inputs and offtakes. Where the sum of a network user's inputs for the gas day is not equal to the sum of its offtakes for this gas day, a network user is deemed imbalanced for this gas day and daily imbalance charges shall be applied.

In all the countries where applicable (AT, BE/LU, CZ, DE, DK/SE, EE, ES, FR, HR, HU, IE, IT, LV, LT, NL (GTS), PL, PT, RO, SI and UK-GB) the daily imbalance quantity is calculated for each network user's balancing portfolio for each gas day.

The daily imbalance quantity calculation shall be adapted accordingly where a linepack flexibility service is offered and/or arrangements are in place whereby network users provide gas, including gas-in-kind, to cover gas unaccounted for as off-taken from the system (e.g. losses, metering errors) and/or fuel gas used by the TSO. 4 countries (CZ, ES, NL and PT) reported to have adapted the daily imbalance calculation according to this provision of BAL NC, for the others this provision is not applicable.

Applicable price

As part of the calculation methodology, the applicable price for the daily imbalance charge calculation shall take into account the TSO sell/buy prices, the weighted average price (WAP) of the gas and a small adjustment:

- 20 countries (BE/LU, CZ, DE, DK/SE, EE, ES, FR, HR, HU, IE, IT, LV, LT, PL, PT, RO[37], SI and UK-GB) reported the determination of the applicable price in compliance with Article 22(2) of the BAL NC.
- For 2 countries (AT[38] and NL[39]) this provision in not applicable.
- BG, GR, SK and UK-NI apply the interim imbalance charge methodology.

If it is not possible to derive a marginal sell/buy price according to the methodology set by Article 22(2), BAL NC allows to define a default rule. Table 5 below shows more details on the applied default rule.

37 Romania has implemented daily imbalance charge in 2018 and updated the existing national network code accordingly.

38 The imbalance charge is calculated as the market price at the exchange of VTP.

39 GTS offers a linepack flexibility service (LFS). 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.

Table 5. Default rule applied in case marginal sell/buy prices not available

Country/Balancing Zone	Default rule applied in case marginal sell/buy prices not available
BeLux	Marginal sell/buy prices equal to the weighted average price. If no WAP is available, the previously available weighted average price is considered.
Bulgaria	If there are no trades at a trading platform and thus marginal price cannot be derived, then the administrative price shall be applied (regulated price +/– small adjustment).
Croatia	Applicable price is based on the marginal sell and marginal buy price from the last gas day in which there were concluded transactions on the trading platform.
Czech Republic	http://www.eru.cz/en/-/vyhlaska-c-349-2015-sb-o-pravidlech-trhu-s-plyn-2 (see Schedule 6)
Germany – NCG/GP	If not available, the respective imbalance price of the previous day is used.
Hungary	If no transaction has been concluded for a gas day that could serve as a basis for calculating clearing price, the clearing price of the previous day shall be used in the accounting of the given gas day.
Spain	If prices not available, last calculated marginal sell/buy prices apply.
France	Use of back-up price provided by PEGAS platform
Ireland	If IBP SAP cannot be determined then the UK SAP is used +/– small adjustment of 3.5 %
Italy	If not available, the WAP is equivalent to the WAP of the previous thirty days.
Portugal	As a default rule, not having a price at national VTP, daily weighted average prices at the PVB (Spanish VTP) are considered (cross-border tariffs are added/ discounted to the before mentioned prices).
Poland (all zones)[40]	If WAP not available, the last available intraday market index of the trading platform used in each respective area is used.
Romania	If prices are not available, the most recent average sale/purchase price of the last 6 days applies
Slovenia	Average of the last 5 weighted average prices from the trading platform
UK-GB[41]	A default adjustment is required when the GB TSO does not undertake any Market Balancing Actions within a day and accordingly a default marginal price is applied.
UK-NI	The Marginal Sell Price is equal to the lower of: (i) the Daily Gas Price multiplied by 0.7; or (ii) the System Marginal Sell Price on the relevant Gas Flow Day D The Marginal Buy Price is equal to the higher of: (i) the Daily Gas Price multiplied by 1.5; or (ii) the System Marginal Buy Price on the relevant Gas Flow Day D

40 Poland L-gas area: Until the first non-zero value of the TGEglwID index is published, the WAP of the purchase of fuel gas by the TSO is used for the purpose of marginal prices determination.
Poland TGPS area: The intraday market is not available yet at the trading platform in this balancing zone, therefore until the intraday market starts at the trading platform in this balancing area and until the first transaction is concluded on this market, the index from day ahead market (TGEsgtDA index) is taken as the WAP. If TGEsgtDA index equals 0, the WAP from the high-methane gas balancing area for a given gas day is taken as WAP for TGPS.

41 Further details for both UK-GB and UK-NI in the Uniform Network Code: https://bit.ly/2SMiqYe, https://bit.ly/36hiIu5

Small adjustment

As part of the approved calculation methodology, the small adjustment contributes to determine the marginal sell and buy price. Some countries reported evidence of how the small adjustment incentivises network users to balance their inputs and off-takes.

- In Germany the small adjustment is intended to prevent the balancing group manager from optimising gas purchases and gas sales using imbalance gas. As the management of a balancing group involves costs, without a surcharge or deduction the incentive to supply customers from imbalance gas would actually be increased. Furthermore, current information on the cross-border price indicates that this price would be not inconsiderable and on many days above the imbalance price if merely the weighted average price of gas were to be used with no surcharge or deduction.
- In Lithuania, the small adjustment increases the total payable amount for the imbalance that the network user caused and incentivises network users to keep the imbalance as small as possible.
- Poland stated that the small adjustment at the level of 10 % makes the marginal prices more predictable, because it reduces the risk that the TSO's balancing transaction will be the factor influencing the marginal prices. Poland H and L area suggested that the rate of small adjustments should be determined at a level that would incentivize shippers to balance their portfolios by making transactions on trading platforms rather than to settle the imbalance with the TSO.

Table 6 provides information regarding the value of the small adjustment for each balancing zone where data is available.

Table 6. Small adjustment applied

Country/ Balancing zone	Value of the small adjustment for determining the marginal buy/sell price (Article 22 (7)).
BeLux	Small adjustment causer = 3 %, small adjustment helper = 0 %[42]
Bulgaria	8 % of both sell and buy price
Croatia	+/– 10 % of weighted average price (WAP)
Czech Republic	2 – 5 % of WAP, depending on the value of the aggregate imbalance
Germany (NCG/GP)	+/– 2 % of WAP
Denmark/ Sweden	+/– 0,5 % in both direction (3 % in certain cases)
Spain	+/– 2,5 % of WAP
France	+/– 2,5 % of WAP
Croatia	+/– 10 %
Hungary	+/– 1 % of WAP
Ireland	+/– 3.5 % of WAP
Italy[43]	0,108 €/MWh for the marginal buy and the marginal sell prices
Lithuania	+/– 10 % of WAP
Poland (all areas)	+/– 10 % of WAP
Portugal	+/– 2,5 % of WAP
Romania	+/– 10 % of WAP
Slovenia	+/– 10 % of WAP
Slovakia	+/– 7 % of WAP
Spain	+/– 2,5 % of WAP
UK-GB	Default System Marginal Price applicable from October 2019: 0.0353 pence/kWh.

42 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.

43 According to Italian regulation (Resolution 312/2016/R/gas) the value of the small adjustment for the Marginal Buy and the Marginal Sell prices is set at 0,108 €/MWh. See art. 5.1 of the Annex A: https://www.arera.it/allegati/docs/16/312-16alla.pdf

2.7 WITHIN DAY OBLIGATIONS (WDOs)

In order to incentivise network users to manage their within day position in view of minimising TSOs (or, where applicable, Market Area Manager) need to undertake balancing actions, the BAL NC allows TSOs to implement Within Day Obligations (WDOs). WDOs can be applied in order to:

1. Keep the transmission network within its operational limits (System-wide WDO);
2. Keep network users' position during the gas day within a pre-defined range (Balancing portfolio WDO);
3. Limit the gas flow or the gas flow variation under specific conditions at specific entry-exit points (Entry-exit point WDO).

Compared to the previous report, Austria, Belgium/Luxembourg, Germany and the Netherlands remain the only countries who have implemented WDOs. Austria reported that the methodology changed in 2017 and since then no changes have been applied[44]. (see Annex V for more details). Changes in Austria concerning WDOs are expected in October 2021.

Annex V provides the sum of volumes of WDOs applied to all users (absolute value) and the sum of all volumes of the day imbalance volumes applied to all users (absolute value).

2.8 INCENTIVES

According to the provision of Article 11 (1) of the BAL NC, the NRA can incentivise the TSO to undertake balancing actions efficiently or to maximise the undertaking of balancing actions through trade in STSPs. The incentive mechanism is based on some predetermined TSO's performance targets and implies a capped payment to/by the TSO in case of outperformance/underperformance.

In total, at the date of 1 October 2019, four countries (AT, ES, IT and UK-GB) have an incentive mechanism in place.

2.9 NEUTRALITY ARRANGEMENTS

According to the provisions of the BAL NC, the TSOs shall not gain or lose by the payment and receipt of daily imbalance charges, within day charges, balancing actions charges and other charges related to their balancing activities. Any costs or revenues arising from balancing activities shall be passed by TSOs to network users. The NRAs shall approve and publish the methodology for the calculation of the neutrality charges for balancing and TSOs shall publish the aggregate neutrality charges for balancing at least once per month.

22 countries (BE/LU, BG, CZ, DE, ES, EE, FR, GR, HR, HU, IE, IT, LV, LT, NL, PL, PT, SK, SI, UK-GB and UK-NI) implemented neutrality provisions already in GY 2016/17, while Romania implemented them in GY 2017/18. 3 countries (AT and DK/SE) did not implement neutrality provisions.

Where an incentive mechanism promoting efficient undertaking of balancing actions is implemented, the aggregate financial loss shall be limited to the TSO's inefficiently incurred costs and revenues. 4 countries (BG, ES, IT and UK-GB) that implemented incentive mechanisms reported that this provision is applied.

The TSOs are entitled to take necessary measures and impose relevant contractual requirements, including financial security safeguards, on network users in order to mitigate their default in payment of balancing charges. To this extent, Article 31(3) of the BAL NC set the provision to establish credit risk management arrangements. TSOs in 22 countries (BE/LU, BG, DE, EE, ES, FR, GR, HR, HU, IE, IT, LT, LV, NL, PL, PT, RO, SI, SK, UK-GB and UK-NI) have implemented financial security measures, other 4 (AT, CZ and DK/SE[45]) did not implement this.

44 The scale rates and the relevant balancing incentive mark-ups were slightly adjusted in favour of the Balance group representatives.

45 There's no longer a requirement for this type of financial security in Sweden. The option to use it still exists in the agreement, but the right is not exercised.

2.10 INFORMATION PROVISION

2.10.1 INFORMATION OBLIGATIONS OF TSOs TOWARDS THE NETWORK USERS

In order to allow the network users to balance their portfolios, TSOs shall provide them with information regarding the overall status of the transmission network, the TSO's balancing actions and each network user's inputs and off-takes for the gas day.

Three classes of information are available:

1. Intraday Metered inputs/offtakes (IM) (e.g. large industrial factories)
2. Daily Metered off-takes (DM) (e.g. smaller commercial entities)
3. Non-Daily Metered off-takes (NDM) (e.g. domestic households)

Where a measured quantity cannot be obtained from a meter, a replacement value may be used as an alternative reference.

- At 1 October 2019, all the countries, except Romania, implemented the information provision of BAL NC.
- Lithuania implemented the information provision in GY 2017/18.
- Sweden merged with Denmark in the Joint Balancing Zone and applied the information provisions in place in Denmark.
- Romania reported that the provisions of Article 32-42 have not been implemented or just partially. In particular, the provisions of Article 36, regarding NDM off-takes have not been implemented[46] yet.

Details per country on the information model adopted can be found in Annex VI.

Intraday metered inputs and off-takes

For intraday metered inputs to and off-takes from the balancing zone, where a network user's allocation equals its confirmed quantity, the TSO shall only provide information on the confirmed quantity.

In case the network user's allocation does not equal its confirmed quantity, the TSO shall provide the network users with a minimum of two updates of their measured flows for at least the aggregate intraday metered inputs and off-takes.

- 20 countries (AT, BE/LU, BG, DE, DK/SE, ES, FR, GR, HU, IE, IT, NL, PL, PT, RO, SK, SI and UK-GB) have implemented the provisions of Article 34 at the date of 1 October 2019.
- For other 6 countries (CZ, EE, HR, LV, LT and UK-NI) the Article is not applicable.

Daily and Non-Daily metered off-takes

For daily and non-daily metered off-takes, the BAL NC allows three types of information models:

1. Base case: the information on NDM off-takes consists of a day ahead and within day forecasts;
2. Variant 1: the information on NDM and DM off-takes is based on apportionment of measured flows during the gas day;
3. Variant 2: the information on NDM off-takes is a day ahead forecast.

The NRA shall decide on one information model per balancing zone.

Table 7 illustrates/shows which information model is applied in each country at 1 October 2019.

Table 7. Information model is applied in each country/ balancing zone at the date of 1 October 2019

Information model	Countries/Balancing zones
Base case	AT, CZ, DK/SE, EE[47], ES, FR, HR, IE, IT, LV, LT, PL[48], RO[49], UK-GB, UK-NI
Variant 1	BE/LU, BG, HU, NL, SI
Variant 2	DE, PT
No model	GR, SK

46 The Romanian TSO submitted in November 2019 a draft methodology proposal to the NRA based on the data supplied by the DSO on the forecasted quantities to be consumed by the non-daily metered final clients.

47 Base case is used, but not decided yet by NRA

48 For the Polish TGPS balancing zone the information model provisions are reported as not applicable as it has no non-daily metered off-takes and no DSO is connected to the system

49 Not all the BAL NC information provisions have been implemented

- Croatia implemented the information provisions for daily and non-daily metered off-takes in GY 2017/18.
- In Greece the NRA is still investigating the adoption of the most suitable information model.
- Slovakia still does not have daily and non-daily metered off-takes.
- Romania reported that the provisions of Article 36 have still not been implemented. The approved model in place is the base case information model. The methodology for forecasting non-daily metered off-takes of the network users is under debate and analysis. The proposed solution is that the information on consumption shall be supplied to the TSO by the DSO.

Frequency of updates

Where the **base case information model** is used, the TSOs shall provide network users on gas day D-1 with a forecast of their NDM off-takes for gas day D, and on the gas day D network users should receive a minimum of two updates of the forecast of their NDM off-takes.

14 out of 16 countries (AT, CZ, DK/SE, DE, ES, FR, IE, IT, LV, LT, PL, UK-GB and UK-NI) that apply the base case model reported that they comply with the provisions of Article 36(1).

- In case of Romania, the provisions of Article 36 are not fully implemented yet.
- In case of Croatia, the methodology for forecasting NDM off-takes has been defined and adopted in 2019. However, the methodology applies starting from 1 April 2020. Until that day the Croatian TSO provides two allocations of measured quantities on day D, and allocation on day D+1, both calculated pro-rata based on nominations, according to the BAL NC.
- In some cases (AT, FR, IE, UK-GB and UK-NI) more than two updates are provided.

Where **variant 1 information model** is used, the TSOs shall provide network users on gas day D with a minimum of two updates of their apportionment of measured flows for at least the aggregate DM and NDM off-takes, covering either the gas flows from the beginning of the gas day D, or the incremental gas flows after the previous update. All countries that apply the variant 1 model reported that they comply with the provisions of Articles 35–36(4).

Where **variant 2 information model** is used, the TSOs shall provide network users on gas day D-1 with a forecast of their NDM off-takes for gas day D, following the same lead times set by Article 36(a) valid for the base case model.

Both countries (DE and PT) that apply the Variant 2 model reported that they comply with these provisions.

Inputs and off-takes after the gas day

No later than the end of gas day D+1, the transmission system operator shall provide each network user with an initial allocation for its inputs and off-takes on day D and an initial daily imbalance quantity. The BAL NC does not define a time limit for TSOs to provide each network user with the final allocation for its inputs and off- takes and the final daily imbalance quantity. Such a time limit shall be defined at national level.

All countries, except Austria and Poland(TGPS) indicated that the timeframe for initial allocation is no later than the end of D+1, with an initial allocation for its inputs and off-takes on day D and an initial daily imbalance quantity, according to Article 37.

- Austria reported that aggregated provisional consumption information is provided on D+1, by the DSO.
- Poland (TGPS) reported that there are only intraday metered inputs and off-takes in this balancing area and the information provisions of Article 37 are not necessary (according to Article 34.1 for intraday metered inputs to and off-takes from the balancing zone, where a network user's allocation equals its confirmed quantity, the transmission system operator shall not be obliged to provide information other than the confirmed quantity).

2.10.2 INFORMATION OBLIGATIONS OF DSOs AND FORECASTING PARTIES TOWARDS TSOs

The forecasting party is responsible for forecasting a network user's non-daily metered off-takes and, where appropriate, its subsequent allocation. After prior consultation with TSOs and DSOs concerned, the BAL NC foresees designating a forecasting party by balancing zone. This may be a TSO, a DSO or a third party.

Compared to the previous report, no further implementation has been reported by the monitored countries as of October 2019[50] (see Table 8).

Table 8. Overview of designated and implemented forecasting party at the date of 1 October 2019

Forecasting party				
TSO	**DSO**	**Third party**	**Under discussion**	**No forecasting party foreseen**
BE/LU, DK/SE, FR, HR, IE, IT, PT, SI, UK-GB, UK-NI (12 countries)	DE, HU, LT, LV, PL (5)	AT, CZ, ES, NL (4)	EE, RO (2)	BG, EL, SK (3)

2.10.3 COST BENEFIT ANALYSIS (CBA)

The BAL NC set a deadline for TSOs to run a cost-benefit analysis to assess costs and benefits of the (1) frequency, (2) reduction of related timelines and (3) improvement of accuracy of the information provided. TSOs should have run the CBA (according to Article 38) within two years as from the entry into force of BAL NC (i.e. before the 16 April 2016).

At 1 October 2019, 17 countries (AT, BE/LU, CZ, DE, ES, IT, DK/SK, EE, FR, LT, NL, PL, PT, UK-NI and UK-GB) reported to have performed the CBA. Some countries reported updates on the matter:

- Bulgaria reported that Balancing Rules were publicly consulted and analysed in GY 2018/19. All the network users were satisfied with the frequency and the accuracy of the information provided;
- Germany reported that the NRA decided that an improvement of the data quality was fundamental to increase the frequency of information provision to network users. Consequently, the NRA initially performed an analysis to identify network operators with an inadequate performance with regard to information provision. During the NRA analysis of the network operators who did not sufficiently meet the data quality standards, the respective network operators presented individual measures and schedules for an improvement of their data quality performance. Taking the 2019 analysis into account the NRA intends to repeat the analysis in 2020 with a broader scope;
- In the Netherlands, the NRA decided not to increase the frequency updates;
- In Portugal, changes regarding information provision were asked by the network users and then reflected on a proposal[51] sent by the TSO to the NRA. Currently the TSO is still waiting for the NRA's approval;
- In Spain a report was produced to assess the costs and benefits of increasing the frequency of information provision to users, reducing the information deadlines and improving the forecasting of the supplied information during the gas day, the day before and after the gas day. No need on increasing and improving information provision was detected in this report;
- In Northern Ireland the NRAs decided in 2019 that no changes were required as stakeholders confirmed that the information provision is sufficient to enable them to balance their inputs and offtakes;
- The rest of the countries did not provide an answer on the matter.

50 Few specifications: Romania reported that in October 2018 a draft methodology for forecasting NDM off-takes proposed by the TSO was submitted to the NRA for approval. Northern Ireland reported that forecasting party arrangements became operational on 1 October 2017 and published a report on the accuracy of the forecast of a network user's NDM off-takes in GY 2017/18.

51 Report can be found on link https://www.ign.ren.pt/web/guest/cba-information-provision-2018

2.11 LINEPACK FLEXIBILITY

The linepack flexibility service (LFS) is an additional tool to allow network users to be balanced at the end of the day. TSOs can offer a LFS to network users subject to the NRA's approval of the related terms and conditions.

Compared to the previous Implementation Monitoring Report, no other country reported the offer of LFS. The countries in which the LFS is provided remain CZ, FR, NL and PT.

- Netherlands reported an update on the reason to use this service. Network users (and accordingly the NRA) have decided in favour of this option above the cash out regime according to the BAL NC provisions. As a consequence, the final daily imbalance quantity is always zero, but network users pay for the use of the LFS. The LFS is based on the absolute value of the Portfolio Imbalance Value (POS) at the end of the gas day. Network users are therefore able to help the system by buffering in the night, in preparing for the morning peak between 07:00 – 09:00 and for the second peak around 17:00 – 19:00.
- Portugal specified that the main reason for offering LFS to the market is to prevent possible undesirable extra costs for the system. This is only possible as there was available linepack flexibility not needed for the TSO's own balancing operations.

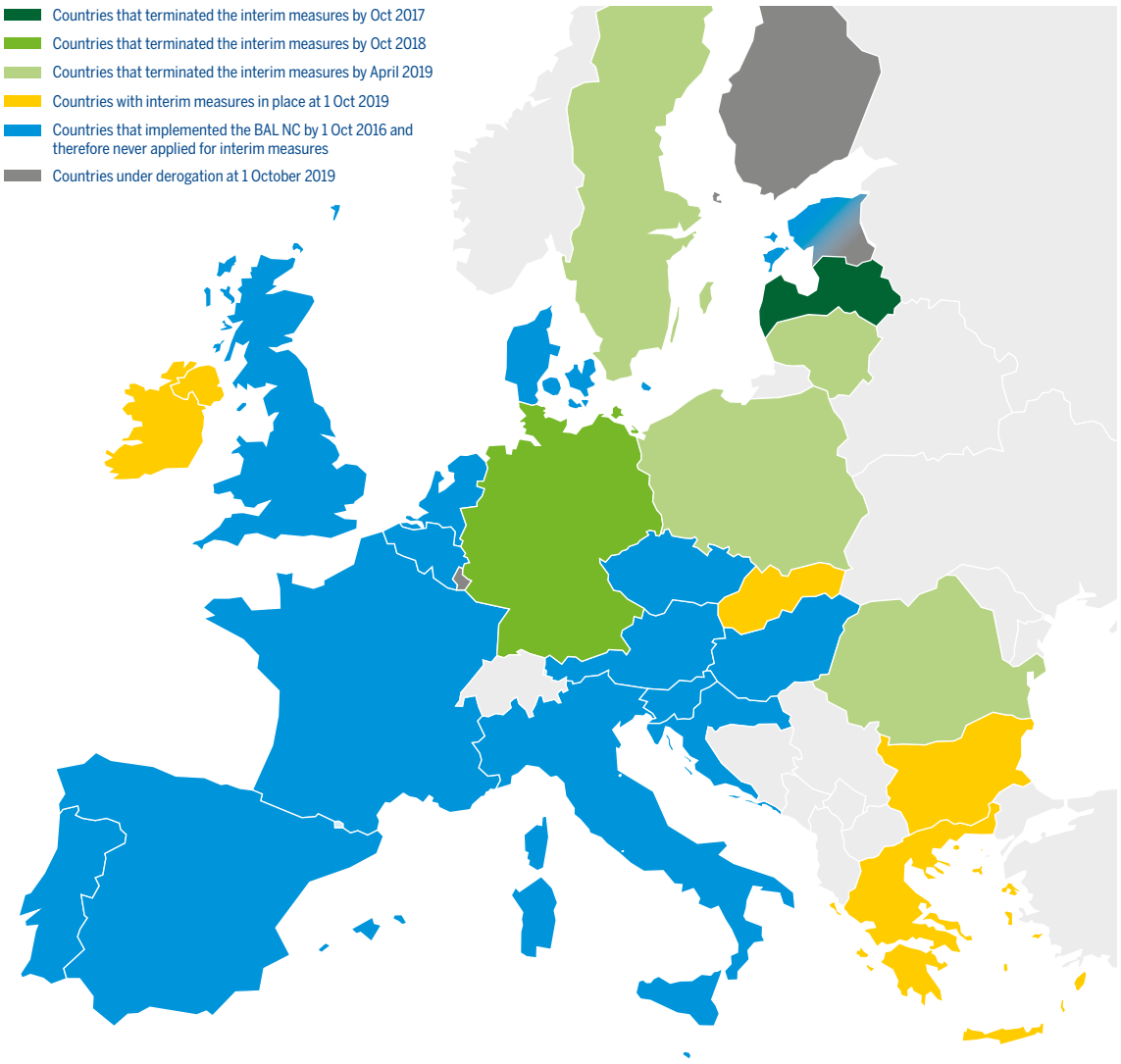
2.12 INTERIM MEASURES

The BAL NC allows the TSOs to implement interim measures in the absence of sufficient liquidity in the short-term wholesale gas market, with the aim to promote competition and liquidity of the short-term wholesale market. The BAL NC set four types of interim measures: balancing platform (Article 47), alternative to a balancing platform (Article 48), interim imbalance charge (Article 49) and usage of tolerances (Article 50).

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). 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.

As of October 2019, 5 countries (BG, 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. Poland and Romania terminated the use of interim measures in April 2019 in all the three balancing zones, while Latvia terminated the interim measures in place in October 2018.

Map 6 shows an overview of the progressive termination of interim measures over the years 2017 – 2019.



* Finland and Estonia under derogation at 1 October 2019
** In Ireland tolerances have been almost completely removed by April 2019, except for few Daily Metered sites

Map 6. Interim measures in place at 1 October 2019

Planned termination of interim measures

- Bulgaria plans to terminate using an alternative to the balancing platform with a transitory period of two months after the trading platform is considered as fully functional. Bulgaria has three types of interim measures in place: (i) a VTP, established as an alternative to balancing platform to ensure short term trades, thus increasing the liquidity; (ii) an imbalance charge, to incentivise network users to balance daily their balancing portfolios; and (iii) a tolerance that guarantees that the network users are not financially exposed to excessive daily imbalance charges. Regarding the use of tolerances, Bulgaria clarified the relation existing between tolerances and imbalance charges: tolerances were applied until July 2019 when new Balancing Rules and Imbalance charge Methodology entered in force. Until that date, daily Imbalances within the provided tolerance were charged only by price of the natural gas for balancing (which is administratively determined as: regulated gas price), without included small adjustment. Imbalance quantities above the tolerance were charged with the small adjustment.
- Greece reported that the use of the Balancing Platform since July 2018 has already significantly reduced the need for procurement of Balancing Services, thus releasing flexibility to the market. Most balancing actions are carried out on the Balancing Platform, where an increasing number of network users are participating, improving the liquidity of the market. Therefore, the purpose of updating the Interim Measures report was to be granted the right to continue the use of the Balancing Platform until the operation of a Trading Platform which is expected within 2020, in order to continue improving the market functioning in the meantime. In the updated Interim Measures report it is proposed the Balancing Platform to remain operational up to one year (maximum) after the operation of the Trading Platform, in order to facilitate and ensure a smoother transition in the new system.
- Ireland reported that tolerances have been almost completely removed[52] in GY 2018/19 with a minor exception for Daily Metered (DM) sites. However, the tolerance level has been reduced from 30 % to 10 %. This provision will be reviewed in April 2020.
- UK-NI still applies interim measures due to the challenges faced in the country and discussions are ongoing to establish the most appropriate method of balancing the network. According to the interim measures report, the TSOs should continue to use balancing services, imbalance tolerances and administered prices. The same tender process and contract structure for balancing services should be used as for last year. Tolerances levels were reviewed in GY18/19 with proposals for them to be reduced in GY19/20. A trading platform trial should not proceed at this time, but it will be in the future when the market will be more liquid. The feasibility of trading at the adjacent balancing zone was assessed during GY 2018/19
- Slovakia plans to terminate the use of interim measures by April 2024 at the latest.

52 Tolerances were removed for Large Daily Metered (LDM) sites except for gas fired power generators which are exempted from the imbalance charges if their imbalance occurs between 1.30 am and the end of the Gas Day (5am). This is justified by the fact that, due to the topography of the Irish gas network, shippers might not be able to source gas elsewhere during these hours. This measure was agreed by the NRA, subject to constant monitoring and future review on 1 April 2020.

Overview of interim measures in GY 2017/18 and GY 2018/19

Table 9 provides an overview of the evolution of interim measures from GY 2017/18 to GY 2018/19.

Table 9. Overview of the evolution of interim measures from GY 2017/18 to GY 2018/19

	Countries	Reasons for applying the interim measure	Changes since GY 2017/18
Balancing platform	DE-NCG/ DE-GP	Low liquidity of short-term wholesale gas market	Terminated the 01/01/2018
	GR	◢ Low liquidity of short-term wholesale gas market ◢ Different market rules between the Greek and the Bulgarian balancing zone	No changes
	PL (all zones)	Low liquidity of short-term wholesale gas market	Terminated the 01/04/2019
	SE	Low liquidity of short-term wholesale gas market	Terminated the 01/04/2019
	SK	Low liquidity of the short-term wholesale gas market.	No changes
Alternative to a balancing platform	BG	Lack of liquid products to be offered at the balancing platform	The TSO uses alternatives to a balancing platform and Balancing platform, the current system relies on balancing service contracts. Balancing services could be gradually reduced once the trading platform is functional.
	LV	The absence of sufficient liquidity of the short term wholesale gas market	Terminated the 01/10/2018
	RO	The absence of sufficient liquidity of the short term wholesale gas market	Terminated the 16/04/2019
	SK	Used in case of unsuccessful auction at the balancing platform	No changes
Interim daily imbalance charge	BG (administrated price)	Low liquidity of short-term wholesale gas market	No changes
	GR (price derived from balancing platform trades)	Low liquidity of short-term wholesale gas market	No changes
	IE (proxy for a market price)	Low liquidity of short-term wholesale gas market	Terminated the 01/04/2019
	LV (N/A)	(NA)	Terminated the 01/10/2018
	UK-NI (proxy for a market price)	Low liquidity of short-term wholesale gas market	No changes
	PL-L (price derived from balancing platform trades)	Low liquidity of short-term wholesale gas market	Terminated the 01/04/2019
	PL-TGPS (proxy for a market price)	Low liquidity of short-term wholesale gas market	Terminated the 01/04/2019
	RO (proxy for a market price)	Low liquidity of short-term wholesale gas market	Terminated the 16/04/2019
	SK (price derived from balancing platform trades)	Low liquidity of short-term wholesale gas market	No changes
	SE (price derived from balancing platform trades)	Low liquidity of short-term wholesale gas market	Terminated the 01/04/2019

Table 9. Overview of the evolution of interim measures from GY 2017/18 to GY 2018/19

	Countries	Reasons for applying the interim measure	Changes since GY 2017/18
Tolerances	BG (5 % of exit capacity of each network user)	Reduction network users' financial exposure to excessive daily imbalance charges	BG (3 % of exit capacity of each network user until Oct 2018)
	GR (+/– 10 % max between daily inputs/ off-takes)	Used in absence of a balancing platform	Terminated the 01/01/2019
	IE (30 %)	Reduce financial exposure of shippers to imbalances due to gas network constraints	Reduced to 10 %. To be reviewed in April 2020)
	LT (5 % of gas delivered in Oct-Apr, 15 % gas delivered in May-Sep)	Absence of sufficient liquidity of short-term wholesale market	Terminated the 31/03/2019
	PL-H[53] (5 % until 1 April 2018, 2,5 % from 1 April 2018)	Absence of sufficient liquidity of short-term wholesale market	Terminated the 01/04/2019
	RO (5 %)[54]	Absence of sufficient liquidity of short-term wholesale market	Terminated the 16/04/2019
	UK-NI[55]	◢ Absence of sufficient liquidity of short-term wholesale market ◢ Increase competition	No changes

Annex VII provides more details on the interim measures used in each country.

With regards to the information provisions when interim measures are applied, the BAL NC states that an initial allocation and initial daily imbalance quantity can be provided by the TSOs within three gas days after the gas day D, in case it would not be technically or operationally feasible to comply with the deadline of the end of gas day D+1. None of the countries apply this provision of BAL NC.

53 The tolerance level was designed in accordance with Article 50.5. The tolerance level was consulted with network users and approved by the NRA. The following formula is used to calculate the tolerance:
DLN = 0,5 × MAX [((R_Entry + R_Exit)) / 2;R_Exit] until 1 April 2018
DLN = 0,025 × MAX [((R_Entry + R_Exit)) / 2;R_Exit] as of 1 April 2018 ;
where R means the quantities of gas delivered/offtaken, as appropriate, at Entry/Exit Points (excluding virtual entry/exit points – Gas Exchange, OTC, Notifying Party, Balancing Services Market).

54 The daily tolerances are not cumulative and are closed by trading them with the TSO. The amount of the cumulated quantity of the physical imbalance cannot exceed the guarantee of each NU for the balancing gas.

55 For each Shipper, a single aggregate "Imbalance Tolerance Percentage" or "ITP" will be calculated as a weighted average across all the NI Exit Points which the Shipper supplies. ITP (as %) = 100 × (a + b + c + d) / TCvm (where: a = Cvm × Cf for Un1 , b = ∑Cvm × Cf for Un2 , c = ∑Cvm × Cf for Un3, d = ∑Cvm × Cf for Un4, ∑Cvm = max quantity (in kWh/d) required to supply all the Shippers' demand in the relevant load category on a Gas Flow Day at all NI Exit Points, as set out in the Shippers' Downstream Load Statement, TCvm = aggregate of each ∑Cvm, Un identifies the load category according to the Load Category Weighting Table, Cf = weighting factor depending on the load category as listed in the Exit Point Tolerance Table.) In respect of a Gas Flow Day, the NI TSOs shall determine a Shippers' "Imbalance Tolerance Quantity" or "ITQ" by applying the weighted average percentage tolerance to the sum of a Shipper's Exit Allocations (though not including Trade Sell Allocations as these are allocated whole) where: ITQ = ITP × (∑ Final Exit Allocations D + ∑ Final VRF IP Exit Allocations D)

3 CONCLUSIONS

- At 1 October 2019, almost all the countries fully applied the BAL NC provisions. Interim measures should have been terminated by April 2019 according to the provisions of Article 45(4)[56]. Compared to the previous Implementation Monitoring Report 2017, 6 countries (DE, LT, LV, PL, RO and SE) terminated the use of interim measures. 5 countries (BG, GR, IE, SK and UK-NI) still have interim measures in place. The main reason indicated by these countries to implement interim measures is because of the absence of sufficient liquidity of the short-term wholesale gas market. However, the interim measures in place are planned to be removed within the next five years, as soon as well functioning trading platforms are established, and market liquidity is developed.
- At 1 October 2019, 20 countries have established a trading platform: 18 countries (AT, BE/LU, CZ, DE, DK/SE, ES, FR, HR, HU, IT, LT, LV, NL(GTS) , PL, SI, UK-GB) established a trading platform already in GY 2016/17, Ireland and Romania in GY 2017/18.
- Compared to the previous Implementation Monitoring Report, Greece, Ireland and Romania introduced STSPs in GY 2017/18. Poland L-gas area started to offer STSPs in GY 2018/19 and Sweden adopted the STSPs offered in Denmark after the balancing zone merger in 2019.
- Balancing services are still available in 14 countries (BG, CZ, DE, EE, GR, HR, LV, LT, PL-H, PT, SI, SK, UK-NI and UK-GB), but only 12 countries (BG, CZ, DE, EE, GR, IE, LT, PL-H, PT, SK, SL and UK-NI) reported to have used balancing services in GY 2017/18 and 9 countries (BG, DE, EE, GR, LT, LV, PL-H, SK and UK-NI) in GY 2018/19.
- All countries cooperated with the adjacent TSO(s) for the purpose of implementing nomination and re-nomination rules for bundled capacity products at Interconnection Points (IPs). Implementation status of the nomination rule for bundled capacity shows a significant improvement compared to GY 2016/17, where only 6 countries had reported to have cooperated with the adjacent TSO(s) for this purpose.
- Four countries (BG, GR, SK and UK-NI) reported the application of an interim imbalance charge, while the others have already implemented daily imbalance charges. 20 countries (BE/LU, CZ, DE, DK/SE, EE, ES, FR, HR, HU, IE, IT, LV, LT, PL, PT, RO, SI and UK-GB) reported the use of the applicable price in compliance with Article 22(2) of the BAL NC. For 2 countries (AT and NL) this provision in not applicable.
- 22 countries (BE/LU, BG, DE, EE, ES, FR, GR, HR, HU, IE, IT, LT, LV, NL, PL, PT, RO, SI, SK, UK-GB and UK-NI) have implemented financial security measures according the neutrality arrangements set by Article 31(3) of the BAL NC.
- As of October 2019, all the countries, except Romania, implemented the information provision of BAL NC. Lithuania implemented the information provision in GY 2017/18, while Sweden merged with Denmark in the Joint Balancing Zone and applied the information provisions in place in Denmark.

Although the BAL NC has been largely implemented in most of the countries, some key challenges have been reported during and/or following the BAL NC implementation phase in specific areas of concern:

- Low level of market liquidity and lack of flexible sources for balancing purposes (GR, IE, LV, PL-L, PT, UK-NI);
- Limited activities on the balancing platform and trading platform (LV, PL-L, UK-NI);
- IT challenges (CZ, GR);
- Difficulties in establishing a Trading Platform (BG, PT);
- Gap in existing legislation (BG, CZ, LV).

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 challenges identified and to remove the interim measures in place.

56 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.

ANNEXES

ANNEX I: LIST OF ABBREVIATIONS

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

ANNEX II: OVERVIEW OF COUNTRIES WITH THEIR BALANCING ZONES

Acronym	Country	Balancing zone
AT	Austria	Austria – Market Area East[57]
BE/LU-H	Belgium and Luxembourg[58]	BeLux H-gas
BE-L	Belgium	Belgian L-gas
BG-N BG-T	Bulgaria	National balancing zone (NGTN) Transit balancing zone (GTNTT)
CZ	Czech Republic	Czech Republic Balancing Zone
DE-GASPOOL DE-NCG	Germany[59]	Gaspool Germany Market Area Net Connect Germany (NCG) Market Area
DK/SE	Denmark and Sweden[60]	Joint Balancing Zone
EE	Estonia[61]	
ES	Spain	Spanish Balancing Zone
FR-TRF	France	Trading Region France
GR	Greece	Greek Balancing Zone
HR	Croatia	Croatian Balancing Zone
HU	Hungary	Hungarian Balancing Zone
IE	Ireland	Irish Balancing Zone
IT	Italy	Italian Balanizng Zone
LT	Lithuania	Lithuanian Balancing zone
LV	Latvia	Latvian Balancing zone
NL-GTS / NL-BBL	The Netherlands[62]	Dutch Balancing Zone
PL-H PL-L[63] PL-TGPS	Poland	High-methane gas balancing area (H-Gas) Low methane balancing area (L-Gas) Transit Gas Pipeline System (TGPS)
PT	Portugal	Portuguese Balancing Zone
RO	Romania	Romanian National Transmission System
SI	Slovenia	Slovenian Balancing Zone
SK	Slovakia	Slovak Balancing Zone
UK-GB[64]	Great Britain	British Balancing Zone
UK-NI	Northern Ireland	Northern Ireland balancing zone

57 In Austria three market areas exists (East, Tirol and Vorarlberg). 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, therefore two replies have been submitted.

58 Belgium and Luxembourg established the first cross-border balancing zone BeLux (H-Gas) in 2015. In Belgium an additional L-Gas balancing zone (BE-L) exists.

59 The German TSOs and the two market area managers (GASPOOL and NCG) are working on implementing a joint market area that is planned to take effect from 2021.

60 Denmark and Sweden established a Joint Balancing Zone consisting of a common balancing Area for Danish shippers and Swedish balance administrators with effect as of 1 April 2019.

61 Estonia held a derogation at 1 October 2019. Notwithstanding the derogation, Estonia participated in this monitoring report on a voluntary basis.

62 For NL the BAL NC is legally applicable on both TSOs GTS and BBL Company in the Dutch balancing zone. However, BBL is allowed by the NRAs ACM and Ofgem to continue the in=out regime, therefore by definition, no imbalances can occur on the pipeline. Consequently, only the BAL NC Articles not dealing with actual balancing of the grid have been implemented.

63 PL-L-methane balancing area connects customers with gas production facilities. The system is isolated and not directly connected with the PL-H-methane balancing area.

64 For the UK two replies were submitted. This reflects the fact that in the UK there are two balancing zones, one covering Great Britain and one covering Northern Ireland. These balancing zones are in different transmission networks and are regulated by different NRAs. In this report Great Britain will be referred to as UK-GB and Northern Ireland as UK-NI.

ANNEX III: RANKING OF PRODUCTS IN THE BALANCING MERIT ORDER PER COUNTRY/BALANCING ZONE BY 1 OCTOBER 2019

Ranking of products in the balancing merit order per country/balancing zone by 1 October 2019

Country	Bal zone	Ranking in the balancing merit order	Classification of the balancing product	Name of the balancing product	Balancing product approved as an Interim measure (Yes/No)	Gas Quality	Sales/ purchases of the product used for determination of marginal sell/ buy price (art. 22.2, 22.3, 22.5) (Yes/No)
Austria	Austrian Market Area East	1	WD title	Pegas Spot Cegh VTP	no	n/a	n/a
BeLux	BELUX H-gas	1	WD title	ZTP WD	no	H-gas	yes (sales & purchases)
Bulgaria	Bulgaria	1	WD title	WD title	n/a	H-gas	no
Czech Republic	Czech Republic	1	DA title	n/a	no	H-gas	yes (sales & purchases)
		1	WD title	n/a	no	H-gas	yes (sales & purchases)
		2	WD title	n/a	no	H-gas	no
		2	WD title	n/a	no	H-gas	no
		3	Balancing Services (Art. 8.3)	n/a	no	H-gas	no
Germany	Germany (GASPOOL Balancing Services GmbH)	1	WD title	Title Market Transaction	no	global	yes (sales & purchases)
		1	DA title	Title Market Transaction	no	global	yes (sales & purchases)
		2	WD title	Title Market Transaction	no	H-gas	yes (sales & purchases)
		2	WD title	Title Market Transaction	no	L-gas	yes (sales & purchases)
		2	DA title	Title Market Transaction	no	H-gas	yes (sales & purchases)
		2	DA title	Title Market Transaction	no	L-gas	yes (sales & purchases)
		2	WD title	Title Market Transaction	no	L-gas	yes (sales & purchases)
		2	DA title	Title Market Transaction	no	L-gas	yes (sales & purchases)
		2	WD locational	Locational Market Transaction	no	H-gas	no
		2	WD locational	Locational Market Transaction	no	L-gas	no
		2	DA locational	Locational Market Transaction	no	H-gas	no
		2	DA locational	Locational Market Transaction	no	L-gas	no
		3	WD locational	Locational Market Transaction	yes	H-gas	no
		3	WD locational	Locational Market Transaction	yes	L-gas	no
		3	DA locational	Locational Market Transaction	yes	H-gas	no
		3	DA locational	Locational Market Transaction	yes	L-gas	no
		4	Balancing Services (Art. 8.3)	Flexibility Product	no	L-gas	no
		4	Balancing Services (Art. 8.3)	Flexibility Product	no	L-gas	no

Sales/purchases of the product used for determination of weighted average price (art. 22.2 and 22.3) (Yes/No)	Trading platform (Art.10), Balancing Platform (Art. 47), Public Tender (Art.8.3), Other Procedure (Art. 8.4)	Name of the trading platform/ balancing platform	Trading of balancing product in adjacent balancing zone	Remarks
n/a	Trading platform (Art.10)	Pegas		Merger of Powernext and EEX with the effect of 1 January 2020 (so shortly after the monitored period).
no	Trading platform (Art.10)	Powernext-Pegas		
no	n/a	n/a		
yes (sales & purchases)	Trading platform (Art.10)	OTE		Decision between WD and DA product is taken regarding conditions of the network system.
yes (sales & purchases)	Trading platform (Art.10)	OTE		Decision between WD and DA product is taken with regard to conditions of the network system.
no	Trading platform (Art.10)	PEGAS	NCG	Decision between NCG and GPL is taken regarding market liquidity, price and amount of offered capacity.
no	Trading platform (Art.10)	PEGAS	GPL	Decision between NCG and GPL is taken with regard to market liquidity, price and amount of offered capacity.
no	Public Tender (Art.8.3)			
yes (sales & purchases)	Trading platform (Art.10)	PEGAS		
yes (sales & purchases)	Trading platform (Art.10)	PEGAS		
yes (sales & purchases)	Trading platform (Art.10)	PEGAS		
yes (sales & purchases)	Trading platform (Art.10)	PEGAS		
yes (sales & purchases)	Trading platform (Art.10)	PEGAS		
yes (sales & purchases)	Trading platform (Art.10)	PEGAS		
yes (sales & purchases)	Trading platform (Art.10)	PEGAS	TTF	Transportation costs are taken into account in the price comparison within the Merit Order Rank
yes (sales & purchases)	Trading platform (Art.10)	PEGAS	TTF	Transportation costs are taken into account in the price comparison within the Merit Order Rank
no	Trading platform (Art.10)	PEGAS		In the H-Gas-zones: Ontras, Gasunie, Deutschland, Gascade
no	Trading platform (Art.10)	PEGAS		In the L-Gas zones: Gasunie, Deutschland, Gastransport Nord, Nowega
no	Trading platform (Art.10)	PEGAS		In the H-Gas-zones: Ontras, Gasunie, Deutschland, Gascade
no	Trading platform (Art.10)	PEGAS		In the L-Gas zones: Gasunie Deutschland, Gastransport Nord, Nowega
no	Balancing Platform (Art. 47)	GASPOOL		optional: Product with delivery/offtake at specific network areas
no	Balancing Platform (Art. 47)	GASPOOL		optional: Product with delivery/offtake at specific network areas
no	Balancing Platform (Art. 47)	GASPOOL		optional: Product with delivery/offtake at specific network areas
no	Balancing Platform (Art. 47)	GASPOOL		optional: Product with delivery/offtake at specific network areas
no	Public Tender (Art.8.3)	GASPOOL		
no	Public Tender (Art.8.3)	GASPOOL		

Ranking of products in the balancing merit order per country/balancing zone by 1 October 2019

Country	Bal zone	Ranking in the balancing merit order	Classification of the balancing product	Name of the balancing product	Balancing product approved as an Interim measure (Yes/No)	Gas Quality	Sales/ purchases of the product used for determination of marginal sell/ buy price (art. 22.2, 22.3, 22.5) (Yes/No)
		4	Balancing Services (Art. 8.3)	Flexibility Product	no	H-gas	no
		4	Balancing Services (Art. 8.3)	Long-Term Options (Rest of the Day)	no	H-gas	no
		4	Balancing Services (Art. 8.3)	Long-Term Options (Rest of the Day)	no	L-gas	no
		4	Balancing Services (Art. 8.3)	Short-Term Balancing Services	no	H-gas	no
Germany	NetConnect Germany GmbH & Co. KG)	1	WD title	Title Market Transaction	no	global	yes (sales & purchases)
		1	DA title	Title Market Transaction	no	global	yes (sales & purchases)
		1	WD temporal	Title Market Transaction	no	global	no
		1	WD temporal	Title Market Transaction	no	global	no
		2	WD title	Title Market Transaction	no	H-gas	yes (sales & purchases)
		2	WD title	Title Market Transaction	no	L-gas	yes (sales & purchases)
		2	DA title	Title Market Transaction	no	H-gas	yes (sales & purchases)
		2	DA title	Title Market Transaction	no	L-gas	yes (sales & purchases)
		2	WD title	Title Market Transaction	no	L-gas	yes (sales & purchases)
		2	DA title	Title Market Transaction	no	L-gas	yes (sales & purchases)
		2	WD locational	Locational Market Transaction	no	H-gas	no
		2	WD locational	Locational Market Transaction	no	L-gas	no
		2	DA locational	Locational Market Transaction	no	H-gas	no
		2	DA locational	Locational Market Transaction	no	L-gas	no
		2	WD temporal	Title Market Transaction	no	L-gas	no
		2	WD temporal locational	Locational Market Transaction	no	L-gas	no
		2	WD temporal locational	Locational Market Transaction	no	global	no
		4	Balancing Services (Art. 8.3)	Demand Side Management	no	global	no
		4	Balancing Services (Art. 8.3)	Long-Term Options (Rest of the Day)	no	H-gas	no
		4	Balancing Services (Art. 8.3)	Long-Term Options (Rest of the Day)	no	L-gas	no
		4	Balancing Services (Art. 8.3)	Long-Term Options (Day Ahead)	no	H-gas	no

Sales/purchases of the product used for determination of weighted average price (art. 22.2 and 22.3) (Yes/No)	Trading platform (Art.10), Balancing Platform (Art. 47), Public Tender (Art.8.3), Other Procedure (Art. 8.4)	Name of the trading platform/ balancing platform	Trading of balancing product in adjacent balancing zone	Remarks
no	Public Tender (Art.8.3)	GASPOOL		
no	Public Tender (Art.8.3)	GASPOOL		
no	Public Tender (Art.8.3)	GASPOOL		
no	Public Tender (Art.8.3)	GASPOOL		
yes (sales & purchases)	Trading platform (Art.10)	PEGAS		
yes (sales & purchases)	Trading platform (Art.10)	PEGAS		
no	Trading platform (Art.10)	PEGAS		Product with delivery/offtake period of one hour (Currently not in use)
no	Trading platform (Art.10)	PEGAS	TTF	Product with delivery/offtake period of one hour. Transportation costs are taken into account in the price comparison within the Merit Order Rank. (Currently not in use)
yes (sales & purchases)	Trading platform (Art.10)	PEGAS		
yes (sales & purchases)	Trading platform (Art.10)	PEGAS		
yes (sales & purchases)	Trading platform (Art.10)	PEGAS		
yes (sales & purchases)	Trading platform (Art.10)	PEGAS		
yes (sales & purchases)	Trading platform (Art.10)	PEGAS and ICE	TTF	Transportation costs are taken into account in the price comparison within the Merit Order Rank
yes (sales & purchases)	Trading platform (Art.10)	PEGAS and ICE	TTF	Transportation costs are taken into account in the price comparison within the Merit Order Rank
no	Trading platform (Art.10)	PEGAS		In the zones H-Gas North, H-Gas Middle and H-Gas South
no	Trading platform (Art.10)	PEGAS		In the zones L-Gas East and L-Gas West
no	Trading platform (Art.10)	PEGAS		In the zones H-Gas North, H-Gas Middle and H-Gas South
no	Trading platform (Art.10)	PEGAS		In the zones L-Gas East and L-Gas West
no	Trading platform (Art.10)	PEGAS		Product with delivery/offtake period of one hour
no	Trading platform (Art.10)	PEGAS		Product with delivery/offtake period of one hour at the network points Elten and Vreden
no	Trading platform (Art.10)	PEGAS	TTF	Transportation costs are taken into account in the price comparison within the Merit Order Rank
no	Public Tender (Art.8.3)	NCG		Option for demand reduction
no	Public Tender (Art.8.3)	NCG		Option for delivery/offtake of gas on a Rest of the Day basis within pre-defined network zones
no	Public Tender (Art.8.3)	NCG		Option for delivery/offtake of gas on a Rest of the Day basis within pre-defined network zones
no	Public Tender (Art.8.3)	NCG		Option for delivery/offtake of gas on a Rest of the Day basis within pre-defined network zones
				Currently not in use

Ranking of products in the balancing merit order per country/balancing zone by 1 October 2019

Country	Bal zone	Ranking in the balancing merit order	Classification of the balancing product	Name of the balancing product	Balancing product approved as an Interim measure (Yes/No)	Gas Quality	Sales/ purchases of the product used for determination of marginal sell/ buy price (art. 22.2, 22.3, 22.5) (Yes/No)
		4	Balancing Services (Art. 8.3)	Long-Term Options (Day Ahead)	no	L-gas	no
		4	Balancing Services (Art. 8.3)	Long-Term Options (hourly)	no	L-gas	no
		4	Balancing Services (Art. 8.3)	Short-Term Balancing Product (Rest of the Day)	no	L-gas	no
		4	Balancing Services (Art. 8.3)	Short-Term Balancing Product (Rest of the Day)	no	H-gas	no
Denmark/ Sweden	Joint Balancing Zone	1	WD title	TSO WD yellow zone trade	no	H-gas	n/a
Estonia	Estonia	1	DA title	Long term balancing services	no	H-gas	n/a
Greece	National Natural Gas Transmission System (NNGTS) – Greece	1	WD title	"BGXX00 – Balancing Gas Intraday exp. XX:00"* * Code XX:00 signifies the end of bidding round, e.g. 09:00	yes	global	yes (sales & purchases)
		2	DA title	"BGDA – Balancing Gas Day – Ahead"	yes	global	yes (sales & purchases)
Spain	PVB	1	WD title	GWDES	no	H-gas	yes (sales & purchases)
		2	DA title	GDAES	no	H-gas	yes (sales & purchases)
		3	WD locational		no	H-gas	no
		4	DA locational		no	H-gas	no
France (GRTgaz)	TRF	1	WD title	PEGAS spot	no	global	yes (sales & purchases)
		2	WD locational	Locational	no	global	no
France (Terega)	Trading Region France (TRF)	1	WD title	WD TRF EoD Product	no	H-gas	yes (sales & purchases)
Croatia	Croatia	1	WD title	Unutar dana NAZIVNI PROIZVOD	no	global	yes (sales & purchases)
		2	WD locational	Unutar dana LOKACIJSKI PROIZVOD	no	global	yes (sales & purchases)
		3	DA title	Dan unaprijed LOKACIJSKI PROIZVOD	no	global	yes (sales & purchases)
		4	DA locational	Dan unaprijed	no	global	yes (sales & purchases)
Hungary	Hungary	1	WD title	MGP WD	no	global	yes (sales & purchases)
		2	DA title	MGP DA	no	global	yes (sales & purchases)
		3	WD locational	WD	no	global	yes (sales & purchases)
		4	DA locational	DA	no	global	yes (sales & purchases)

Sales/purchases of the product used for determination of weighted average price (art. 22.2 and 22.3) (Yes/No)	Trading platform (Art.10), Balancing Platform (Art. 47), Public Tender (Art.8.3), Other Procedure (Art. 8.4)	Name of the trading platform/ balancing platform	Trading of balancing product in adjacent balancing zone	Remarks
no	Public Tender (Art.8.3)	NCG		Option for delivery/offtake of gas on a Rest of the Day basis within pre-defined network zones Currently not in use
no	Public Tender (Art.8.3)	NCG		Option for delivery/offtake of gas on an hourly basis at the network points Elten and Vreden
no	Public Tender (Art.8.3)	NCG		Option for delivery/offtake of gas on an hourly basis at the network points Elten and Vreden
no	Public Tender (Art.8.3)	NCG		Option for delivery/offtake of gas on an hourly basis at the network points Elten and Vreden
n/a	Trading platform (Art. 10)	n/a		
n/a	n/a	n/a		
no	Balancing Platform (Art. 47)	DESFA Balancing Platform		
no	Balancing Platform (Art. 47)	DESFA Balancing Platform		
yes (sales & purchases)	Trading platform (Art.10)	MIBGAS		
yes (sales & purchases)	Trading platform (Art.10)	MIBGAS		
No	Trading platform (Art.10)	MIBGAS		Till now only title products have been required to maintain the network within its operational limits
no	Trading platform (Art.10)	MIBGAS		Till now only title products have been required to maintain the network within its operational limits
yes (sales & purchases)	Trading platform (Art.10)	PEGAS		
n/a	Public Tender (Art.8.3)			
yes (sales & purchases)	Trading platform (Art.10)	PEGAS		
yes (sales & purchases)	Trading platform (Art.10)	Plinska trgovinska platforma		
yes (sales & purchases)	Trading platform (Art.10)	Plinska trgovinska platforma		
yes (sales & purchases)	Trading platform (Art.10)	Plinska trgovinska platforma		
yes (sales & purchases)	Trading platform (Art.10)	Plinska trgovinska platforma		
yes (sales & purchases)	Trading platform (Art.10)	CEEGEX and FGSZ Trading Platform		
yes (sales & purchases)	Trading platform (Art.10)	CEEGEX and FGSZ Trading Platform		
yes (sales & purchases)	Trading platform (Art.10)	CEEGEX and FGSZ Trading Platform		
yes (sales & purchases)	Trading platform (Art.10)	CEEGEX and FGSZ Trading Platform		

Ranking of products in the balancing merit order per country/balancing zone by 1 October 2019

Country	Bal zone	Ranking in the balancing merit order	Classification of the balancing product	Name of the balancing product	Balancing product approved as an Interim measure (Yes/No)	Gas Quality	Sales/ purchases of the product used for determination of marginal sell/ buy price (art. 22.2, 22.3, 22.5) (Yes/No)
Ireland	Ireland	1	WD title	IBP WD Gas	no	global	yes (sales & purchases)
		2	DA title	IBP DA Gas	no	global	yes (sales & purchases)
		3	Balancing Services (Art. 8.3)	1) Gas Sales Agreement for Balancing Gas Buys and 2) Gas Sales Agreement for Balancing Gas Sells	yes	H-gas	no
Italy	Italy	1	WD title	STSP title	no	global	yes (sales & purchases)
		2	WD locational	STSP locational	no	global	yes (sales & purchases)
		3	DA title	STSP title	no	global	yes (sales & purchases)
		4	DA locational	STSP locational	no	global	yes (sales & purchases)
Latvia	Latvia	1	WD title	Exchange within day	no	H-gas	yes (sales & purchases)
		2	DA title	Exchange day-ahead	no	H-gas	yes (sales & purchases)
		3	WD locational	Technical balncing services	no	H-gas	yes (sales & purchases)
Lithuania	Lithuania	1	WD title	n/a	no	global	yes (sales & purchases)
		2	DA title	n/a	no	global	yes (sales & purchases)
		3	Balancing Services (Art. 8.3)	Gas sell-purchase agreement	no	global	no
UK-Northern Ireland	Northern Ireland	1	IM product (Art.48)	NI Balancing Gas Contracts (Buy/Sell)	yes	H-gas	no
Netherlands	TTF	1	WD title	TTF WD	no	global	yes (sales & purchases)
		2	WD temporal	TTF Next Hour	no	global	yes (sales & purchases)
Poland	High-methane gas balancing area	1	WD title	GAS_RDB	no	H-gas	yes (sales & purchases)
		2	DA title	GAS_BASE	no	H-gas	yes (sales & purchases)
		3	WD title	GASPOOL WD	no	H-gas	yes (sales & purchases)
		4	WD title	OTE intra day	no	H-gas	yes (sales & purchases)
		5	DA title	GASPOOL DA	no	H-gas	yes (sales & purchases)
		6	Balancing Services (Art. 8.3)	Balancing service	no	H-gas	no
Poland	Low-methane gas balancing area/Poland	1	WD title	GLW_RDB	no	L-gas	yes (sales & purchases)
		2	DA title	GLW_BASE	no	L-gas	yes (sales & purchases)
		3	Balancing Services (Art. 8.3)	Balancing service	no	L-gas	no

Sales/purchases of the product used for determination of weighted average price (art. 22.2 and 22.3) (Yes/No)	Trading platform (Art.10), Balancing Platform (Art. 47), Public Tender (Art.8.3), Other Procedure (Art. 8.4)	Name of the trading platform/ balancing platform	Trading of balancing product in adjacent balancing zone	Remarks
yes (sales & purchases)	Trading platform (Art.10)	Energy Broking Ireland		GNI has solely used the EBI platform since 01/04/2018
yes (sales & purchases)	Trading platform (Art.10)	Energy Broking Ireland		
no	Public Tender (Art.8.3)			
yes (sales & purchases)	Trading platform (Art.10)	MGAS		
yes (sales & purchases)	Trading platform (Art.10)	MGAS		Sales/purchases prices of Locational products are included in the determination of weighted average price in case their use is targeting a System imbalance (not in case these resources are needed just for localised needs).
yes (sales & purchases)	Trading platform (Art.10)	MGAS		
yes (sales & purchases)	Trading platform (Art.10)	MGAS		Sales/purchases prices of Locational products are included in the determination of weighted average price in case their use is targeting a System imbalance (not in case these resources are needed just for localised needs).
yes (sales & purchases)	Trading platform (Art.10)	Get Baltic		
yes (sales & purchases)	Trading platform (Art.10)	Get Baltic		
yes (sales & purchases)	Public Tender (Art.8.3)			
yes (sales & purchases)	Trading platform (Art.10)	Get Baltic		
yes (sales & purchases)	Trading platform (Art.10)	Get Baltic		
no	Public Tender (Art.8.3)			
no	Public Tender (Art.8.3)			Balancing services are classified as Interim Measures but are procured in accordance with article 8.3.
yes (sales & purchases)	Trading platform (Art.10)	Ice Endex Within-Day Market		
yes (sales & purchases)	Trading platform (Art.10)	Ice Endex Within-Day Market		
yes (sales & purchases)	Trading platform (Art.10)	Towarowa Giełda Energii S.A. (TGE)		
no	Trading platform (Art.10)	Towarowa Giełda Energii S.A. (TGE)		
no	Trading platform (Art.10)	PEGAS	GASPOOL	
no	Trading platform (Art.10)	OTE	NET4GAS	
no	Trading platform (Art.10)	PEGAS	GASPOOL	
no	Public Tender (Art.8.3)			
yes (sales & purchases)	Trading platform (Art.10)	Towarowa Giełda Energii S.A. (TGE)		
no	Trading platform (Art.10)	Towarowa Giełda Energii S.A. (TGE)		
no	Public Tender (Art.8.3)			

Ranking of products in the balancing merit order per country/balancing zone by 1 October 2019

Country	Bal zone	Ranking in the balancing merit order	Classification of the balancing product	Name of the balancing product	Balancing product approved as an Interim measure (Yes/No)	Gas Quality	Sales/ purchases of the product used for determination of marginal sell/ buy price (art. 22.2, 22.3, 22.5) (Yes/No)
Poland	TGPS gas balancing area/Poland	1	DA title	SGT_BASE	no	H-gas	yes (sales & purchases)
		2	WD title	GASPOOL WD	no	H-gas	yes (sales & purchases)
		3	WD title	GAS_RDB	no	H-gas	yes (sales & purchases)
		4	DA title	GASPOOL DA	no	H-gas	yes (sales & purchases)
		5	DA title	GAS_BASE	no	H-gas	yes (sales & purchases)
Romania	Romania	1	WD title	The Short-Term Standardised Products which be traded for delivery on a within day	no	H-gas	yes (sales & purchases)
		2	DA title	The Short-Term Standardised Products shall be traded for delivery on a day ahead basis	no	H-gas	yes (sales & purchases)
Slovakia	Slovakia	1	IM product (Art.45)	EUS sell/buy	yes	global	yes (sales & purchases)
		2	Balancing Services (Art. 8.3)	Balancing service	yes	global	no
		3	DA title	CEGH DA	yes	global	no
Slovenia	Slovenia	1	WD title	WDTP	no	H-gas	yes (sales & purchases)
		2	DA title	DATP	no	H-gas	yes (sales & purchases)
		3	Balancing Services (Art. 8.3)	BALS	no	H-gas	no

Sales/purchases of the product used for determination of weighted average price (art. 22.2 and 22.3) (Yes/No)	Trading platform (Art.10), Balancing Platform (Art. 47), Public Tender (Art.8.3), Other Procedure (Art. 8.4)	Name of the trading platform/ balancing platform	Trading of balancing product in adjacent balancing zone	Remarks
yes (sales & purchases)	Trading platform (Art.10)	Towarowa Giełda Energii S.A. (TGE)		
no	Trading platform (Art.10)	PEGAS	GASPOOL	
no	Trading platform (Art.10)	Towarowa Giełda Energii S.A. (TGE)	High-methane gas balancing area/ Poland	
no	Trading platform (Art.10)	PEGAS	GASPOOL	
no	Trading platform (Art.10)	Towarowa Giełda Energii S.A. (TGE)	High-methane gas balancing area/ Poland	
yes (sales & purchases)	Trading platform (Art.10)	BRM-WD		
yes (sales & purchases)	Trading platform (Art.10)	OPCOM PZU BRM – DA		
no	Balancing Platform (Art. 47)	Balancing Platform		
no	Public Tender (Art.8.3)			
yes (sales & purchases)	Trading platform (Art.10)	PEGAS CEGH Gas Exchange	The Market Area East – Austria	
yes (sales & purchases)	Trading platform (Art.10)	VTP-SI		
yes (sales & purchases)	Trading platform (Art.10)	VTP-SI		
no	Public Tender (Art.8.3)			

ANNEX IV: BALANCING SERVICES PROCURED THROUGH PUBLIC TENDER PROCEDURE

Table 10. Balancing services art. 8.3., and art. 8.5 – Product specification per each balancing zone by 1 October 2019

Country	Balancing Zone	Name of the service	Description of Product/ Procurement criteria (purpose, scope an instruction to tenderers etc.) under art. 8.3 a	Frequency of tender process/ measure (e. g annual, half-year, quarterly, monthly, daily, WD)	Price Methodology
Bulgaria	Bulgaria	Information not Available	Balancing services are procured through public tenders announced on the website. Usually, quarterly products are purchased. Purchased gas is stored in own storage facility and used when needed. Tso reviews the usage of balancing services in order to gradually reduces it.	When needed	The evaluation is made by means of the method "lowest proposed price" of 1 MWh
Czech Republic	Czech Republic	Balancing Service	The balancing service consists of a bilateral contract for purchase and sale of gas. The price is paid only when the contract is used	annual	Spot Price +– fee
Germany	Gaspool	Long-Term Options	Long-Term Options are procured as back-up to ensure the availability of locational commodity to be delivered or off-taken within specific network zones or at specific network points at any time. The product is characterised by a commitment of the balancing gas supplier to either sell (SystemBUY) or buy (SystemSELL) gas quantities to/from GASPOOL at any given point in time during the contract period for a specific Long-Term Option, if requested by GASPOOL. Alternatively, the network user can provide the physical effect by securing that a end user reduces or increases its gas flows. The delivery of gas in case of SystemBUY and/or the off-taking of gas in case of SystemSELL has to be conducted within a pre-defined zone of the network or at a specific network point to ensure a locational effect. Long-Term Options are contracted in an open and transparent tendering process in which prequalified balancing gas suppliers are allowed to participate.	Long-Term Options can be tendered on a weekly, monthly, quarterly, half-annual or annual basis, or for alternative periods depending on the requirements of GASPOOL. In the gas year 2017/2018, Long-Term Options were contracted on a monthly basis. The specific runtimes have been published on the GASPOOL website.	In each LTO Bid Providers may specify a capacity charge to be applied throughout the relevant Contract Period agreed so as to remunerate the Provider for its availability to supply gas to (System Buy) or receive gas from (System Sell) the Market Area Manager (MAM). Where a capacity charge is specified, it will be applied constantly throughout the relevant Contract Period (i.e. it will not be subject to variation). A capacity charge must always be a positive price and will be paid irrespective of whether the MAM issues any Call Orders or not. Where a Provider fails to specify a capacity charge, the applicable capacity charge will be recorded as zero (0). In each LTO Bid Providers must specify a commodity charge (in EUR/MWh) for the supply (System Buy) and/or for the receipt (System Sell) of gas quantities. In both cases the commodity charge will be a positive price, which, in the case of gas quantities being supplied by the Provider (System Buy), the MAM shall pay to the Provider, and which, in the case of gas quantities being received by the Provider (System Sell), the Provider shall pay to the MAM.
		Short-Term Balancing Services	STBS are market-based balancing tool that allows providers, especially industrial end users who have not yet marketed their demand-side potential in any other way – e.g. under LTO contracts or via interruption arrangements pursuant to section14b of the German Energy Industry Act (EnWG) –, to offer additional flexibility to the MAMs as and when needed (System Buy or System Sell). Via the STB balancing product industrial end users can provide external balancing services to the MAM by offering to turn down or interrupt their gas demand in return for a fee in the event of short-term local supply constraints. STB balancing services will only be used, however, where they can actually help mitigate or remove a specific threat or disruption on the network or in the network area affected. In order to avoid that the product's specifications conflict with section16(3) of the Energy Industry Act, under which liability for any damage to property arising as a consequence of a threat or disturbance as defined in section 16(2) of the Energy Industry Act is excluded, the criteria for use of the STB product have been defined accordingly and subsequently agreed with the Ministry of Economics Affairs and Energy.	The product is generally tendered only for a gas day offered at short notice (following days only if so specified in bid)	When submitting their STB Bids Providers must specify a commodity charge (in EUR/MWh) for the supply (System Buy) or receipt (System Sell) of gas. In both cases the commodity charge will be a positive price, which, in the case of gas being supplied by the Provider (System Buy), the MAM shall pay to the Provider, and which, in the case of gas being received by the Provider (System Sell), the Provider shall pay to the MAM. No capacity charge will be applied.

Conditions for the TSO(s) to use it	Procurement date (= binding commitment of contracting parties) (Art. 8.5)	Starting date(s) of product (Art. 8.5)	Period between starting date of contract and binding commitment of contracting parties (Art. 8.5)	Duration of product (> 1 year, = 1 year, half-year, quarterly, monthly, daily and/or WD) (Art. 8.5)
yes, in accordance with the merit order	3d quarter of gas year 2017 – 2018	1st of April	n/a	quarterly
TSO would use this balancing service only if all other options that are placed higher in the merit order failed or were not available.	9. 27. 2018	1. 1. 2019	95 days	1 year
The conditions of merit order list rank 4 must be fulfilled before using the Flexibility Product. The MAM shall be entitled to instruct the Provider to supply (System Buy) or receive (System Sell) gas (as the case may be) at the agreed hourly rate in accordance with the description of the relevant Balancing Product on any given gas day throughout the relevant Contract Period by issuing Call Orders to the Provider. Call Orders for the supply (System Buy) or receipt (System Sell) of gas by a Provider may be issued by the MAM up to three (3) hours before the start of the relevant Call Hour.	Long-term Options can be tendered on a weekly, monthly, quarterly, half-annual or annual basis, or for alternative periods depending on the requirements of GASPOOL.	Long-Term Options can be tendered on a weekly, monthly, quarterly, half-annual or annual basis, or for alternative periods depending on the requirements of GASPOOL.	Maximum 4 month	Long-Term Options can be tendered on a weekly, monthly, quarterly, half-annual or annual basis, or for alternative periods depending on the requirements of GASPOOL.
In the merit order list for the procurement of balancing gas, Short-Term Balancing Services is at the lowest rank, meaning that the actual use occurs only in cases where there are not sufficient offers in the higher ranks of the merit order list or where the products in the higher ranks of the merit order list are not suitable to dissolve a specific balancing demand situation.	For each gas day in respect of which the MAM has invited tenders, Providers may submit Short-Term Balancing Services bids offering to supply (System Buy) and/or receive (System Sell) gas in the required gas quality (high CV gas and/or low CV gas) under a Short-Term Balancing Service.	In the gas year 2018/2019, Short-Term Balancing Services was tendered by GASPOOL for the 2 March 19 until 5 March 19 (on a day by day tender), however no offers were submitted by balancing gas suppliers.	For each gas day in respect of which the MAM has invited tenders, Providers may submit Short-Term Balancing Services bids offering to supply (System Buy) and/or receive (System Sell) gas in the required gas quality (high CV gas and/or low CV gas) under a Short-Term Balancing Service.	Short-Term Balancing Services can be tendered on a daily or for alternative periods depending on the requirements of GASPOOL.

Table 10. Balancing services art. 8.3., and art. 8.5 – Product specification per each balancing zone by 1 October 2019

Country	Balancing Zone	Name of the service	Description of Product/ Procurement criteria (purpose, scope an instruction to tenderers etc.) under art. 8.3 a	Frequency of tender process/ measure (e. g annual, half-year, quarterly, monthly, daily, WD)	Price Methodology
		Flexibility Services	Flexibility Services are non-standardised Balancing Products under which the MAM makes use of flexibility services provided by Providers. Under a Flexibility Service the MAM may: ◢ temporarily supply gas to a Provider for the purpose of balancing an oversupply of gas in the Market Area ("Parking"); ◢ temporarily receive gas quantities from a Provider for the purpose of balancing an undersupply of gas in the Market Area ("Lending"); Providers who agree to provide a Flexibility Service undertake to ensure that the agreed Delivery Capacity is available to the MAM, and to receive or supply (as the case may be) a specified gas quantity from or to the MAM on receiving an instruction to this effect from the MAM.	half year	Commodity charge in (€/MWh)/h for each hour the current balance of the gas account is multiplied by the agreed price. If applicable, capacity charge in €/tranche will be in place additionally.
	NCG	Long-Term Option	Long-Term Options are procured as back-up to ensure the availability of locational commodity to be delivered or off-taken within specific network zones or at specific network points at any time. The product is characterised by a commitment of the balancing gas supplier to either sell (SystemBUY) or buy (SystemSELL) gas quantities to/from NCG at any given point in time during the contract period for a specific Long-Term Option, if requested by NCG. The delivery of gas in case of SystemBUY and/or the off-taking of gas in case of SystemSELL has to be conducted within a pre-defined zone of the network or at a specific network point to ensure a locational effect. Long-Term Options are contracted in an open and transparent tendering process in which prequalified balancing gas suppliers are allowed to participate.	Long-Term Options can be tendered on a weekly, monthly, quarterly, half-annual or annual basis, or for alternative periods depending on the requirements of NCG. In the gas year 2015/2016, Long-Term Options were contracted on a weekly, monthly and quarterly basis. The specific runtimes have been published on the NCG website.	During the tendering process, balancing gas suppliers state a demand charge and a commodity charge for each offered Long-Term Option. In case an offered Long-Term Option is accepted by NCG, the balancing gas supplier receives the demand charge to remunerate him for its availability to supply or take off gas quantities during the contract period upon request of NCG. The commodity charge is paid to the balancing gas supplier by NCG (in case of SystemBUY Long-Term Options) or by the balancing gas supplier to NCG (in case of SystemSELL Long-Term Options) for the exchanged commodity in case a Long-Term Option is actually used.
		Short-Term Balancing Service (STB):	STBs are short-term, non-standardised balancing services for the provision of flexibility the MAM may procure in addition to its LTO Balancing Product. Providers who contract with the MAM for the STB Balancing Product undertake to supply (System Buy) or receive (System Sell) a specified gas quantity at a constant hourly rate in accordance with the provisions set out in this Product description on receiving an instruction to this effect from the MAM ("Call Order"), starting from the relevant Call Hour, i.e. the hour from which the Provider is instructed to supply (System Buy) or receive (System Sell) gas as stated in the corresponding Call Order, up until the end of the relevant gas day, i.e. for a maximum of 24 hours per gas day and a minimum of 1 hour per gas day (the "Contract Period"). Except where a Call Order is issued in respect of the last hour of a gas day only, the STB Balancing Product does not involve the supply (System Buy) or receipt (System Sell) of gas during specified individual hours of a gas day. The Provider has an obligation to ensure that it will supply (System Buy) or receive (System Sell) an instructed gas quantity on the instructed gas day from the relevant Call Hour onwards, provided the MAM issues the relevant Call Order in good time in accordance and in compliance with the Call Lead Time specified by the Provider.	The MAM may open bidding windows at short notice by inviting bids for the supply (System Buy) and/or receipt (System Sell) of gas during the same gas day and/or on the following gas day.	On all gas quantities supplied (System Buy) or received (System Sell) by a Provider a commodity charge will be applied, which, in the case of gas being supplied by the Provider (System Buy), the MAM shall pay to the Provider, and which, in the case of gas being received by the Provider (System Sell), the Provider shall pay to the MAM. No capacity charge will be applied.
Greece	National Natural Gas Transmission System (NNGTS) – Greece	LNG Procurement for Balancing Purposes	Public tender to select eligible LNG Users, which sign a Framework Agreement with DESFA. DESFA procures LNG quantities to provide balancing services multiple times per year as needed. Link to latest tender instructions: **https://www.desfa.gr/userfiles/procurement/Δημοσίευση%20 %20στον%20Ελληνικό%20Τύπο%20810_18.pdf**	bi-annual	Connected to TTF daily price. TTF + premium
Latvia	Latvia	Technical Balancing Services	**https://www.eis.gov.lv/EKEIS/Supplier/Procurement/12625**	annual	to VTP delivered gas price (all included)

Conditions for the TSO(s) to use it	Procurement date (= binding commitment of contracting parties) (Art. 8.5)	Starting date(s) of product (Art. 8.5)	Period between starting date of contract and binding commitment of contracting parties (Art. 8.5)	Duration of product (> 1 year, = 1 year, half-year, quarterly, monthly, daily and/or WD) (Art. 8.5)
The conditions of merit order list rank 4 must be fulfilled before using the Flexibility Product. Commencement of supply/receipt within a few minutes after being requested by GASPOOL but no later than 90 minutes thereafter. Other lead times require the prior consent of GASPOOL.	The Flexibility Product can be tendered on a monthly, quarterly, half-annual or annual basis, or for alternative periods depending on the requirements of GASPOOL.	The Flexibility Product can be tendered on a monthly, quarterly, half-annual or annual basis, or for alternative periods depending on the requirements of GASPOOL.	Maximum 5 month	The Flexibility Product can be tendered on a monthly, quarterly, half-annual or annual basis, or for alternative periods depending on the requirements of GASPOOL.
In the merit order list for the procurement of balancing gas, Long-Term Options are at the lowest rank, meaning that the actual use of Long- Term Options occurs only in cases where there are not sufficient offers in the higher ranks of the merit order list or where the products in the higher ranks of the merit order list are not suitable to dissolve a specific balancing demand situation.	The tender for Long-term Options lasts 10 working days and starts no later than 4 weeks before the start of the contract period of a respective Long-term Option.	In the gas year 2015/2016, Long-Term Options were contracted on a weekly, monthly and quarterly basis. The specific runtimes have been published on the NCG website.	The tender for Long-Term Options lasts 10 working days and starts no later than 4 weeks before the start of the contract period of a respective Long-Term Option.	Long-Term Options can be tendered on a weekly, monthly, quarterly, half-annual or annual basis, or for alternative periods depending on the requirements of NCG.
In the merit order list for the procurement of balancing gas, Short-Term Balancing Services are at the lowest rank, meaning that the actual use of Short-Term Balancing Products occurs only in cases where there are not sufficient offers in the higher ranks of the merit order list or where the products in the higher ranks of the merit order list are not suitable to dissolve a specific balancing demand situation. Furthermore, Short-Term Balancing Products serve as a product that can be offered with a shorter lead time than Long-Term Options. Contracted LTOs for the supply or receipt of gas on a RoD basis will be included in a combined Merit Order List together with all STB Bids. Procurement is executed price-optimal.	Starting from the relevant Call Hour, i.e. the hour from which the Provider is instructed to supply (System Buy) or receive (System Sell) gas as stated in the corresponding Call Order, up until the end of the relevant gas day, i.e. for a maximum of 24 hours per gas day and a minimum of 1 hour per gas day (the “Contract Period”).	see above	see above	see above
Imminent violation of NGTS operational limits		According to TSOs needs	Less than three months	Procurement take place several times within a year, following certain procedure specified in the tender documents.
Instability of system	8. 20. 2018	11. 1. 2018	72 days	WD

Table 10. Balancing services art. 8.3., and art. 8.5 – Product specification per each balancing zone by 1 October 2019

Country	Balancing Zone	Name of the service	Description of Product/ Procurement criteria (purpose, scope an instruction to tenderers etc.) under art. 8.3 a	Frequency of tender process/ measure (e. g annual, half-year, quarterly, monthly, daily, WD)	Price Methodology
Lithuania	Lithuania	Gas sell-purchase agreement	The services are bought in a public tender. The gas might be bought for balancing needs with flexible supply schedule. Services has to be paid only if it was used.	Annual	Price was calculated by formula
Poland	High-methane gas balancing area	Balancing service (Branice)	**https://zakupy.gaz-system.pl/app/demand/notice/public/4549/details**	Annual	Price is determined by tender
Slovakia	Slovakia	Information not Available	Information not Available	Annual	Price or buy/sell transactions based on CEGHIX index of PEGAS CEGH Gas Exchange.
Slovenia	Slovenia	Balancing System Services	The balancing service consists of a bilateral contract for purchase and sale of gas concluded via public procurement. The price is paid only when the contract is used.	Annual	Purchase or selling price for natural gas is made up of the selected price index CEGHIX, published every day at 19:15 for a single day and bidding warrant deviation from chosen price index per unit (EUR/kWh) and does not include VAT or taxes. Criterion for selection is the lowest bidding deviation from the selected price index for purchase price per unit (kWh) and selling price per unit (kWh).

Table 11. Balancing services art. 8.4 – Product specification per each balancing zone by 1 October 2019

Country	Balancing Zone	Name of the service	Description of Product/ Procurement criteria (purpose, scope an instructions etc.) under art. 8.4 (incl. link to relevant documents)	Frequency of process/ measure (e.g annual, half-year, quarterly, monthly, daily, WD)	Price Methodology
Portugal	Portugal	Balancing Service	Directiva ERSE 20_2016 Aplicação do MPGTG; Leilões Gás Compensação – Metodologia; Leilões Gás Compensação – Regras Técnicas; Leilões Gás Compensação – Informação Adicional. https://www.ign.ren.pt/web/guest/gestao-comercial1. **http://www.erse.pt/pt/gasnatural/regulamentos/operacaodasinfra-estruturas/Documents/Diretiva%2018_2016 %20de%2027 %20de%20outubro.pdf**	Upon NRA's decision	The reserve price for ST products to be offered through auctions shall be the mean value of the 3 daily weighted average gas prices cleared at Mibgás (Spanish virtual trading point) in the 3 leading days before the auction takes place, aggravated by the cost of the interconnection

Conditions for the TSO(s) to use it	Procurement date (= binding commitment of contracting parties) (Art. 8.5)	Starting date(s) of product (Art. 8.5)	Period between starting date of contract and binding commitment of contracting parties (Art. 8.5)	Duration of product (> 1 year, = 1 year, half-year, quarterly, monthly, daily and/or WD) (Art. 8.5)
Flexible supply schedule adjustment	01.01.19	01.01.19		1 year
In case no Shipper books capacity at the entry point Branice	13. Aug 18	01. Okt 18	12 months	12 months
Eustream nominates gas quantities based on System Imbalance zone.	10. 23. 2018	DA title or WD title as required.	Regulatory approval of NRA.	DA, WD
When the transmission system operator cannot fulfil his needs for transmission system balancing with the purchase or sale of Short-Term Standardized Products in the market, he shall obtain access to natural gas for system balancing by ordering a balancing system service	18th September 2018	1st October 2018	1 year	1 year

Conditions for the TSO(s) to use it	Procurement date (=binding commitment of contracting parties) (Art. 8.5)	Period between starting date of contract and binding commitment of contracting parties (Art. 8.5)	Duration of product (> 1 year, = 1 year, half-year, quarterly, monthly, daily and/or WD) (Art. 8.5)
According to a non discriminatory methodolgy, approved by the NRA	This procedure was approved through a regulatory act by the NRA and is in force as from the implementation date of the NC BAL in Portugal (01.10.2016)	n/a	day-ahead and within-day products shall be offered

ANNEX V: WITHIN DAY OBLIGATIONS

Table 12. Sum of volumes of WDO applied to all users (absolute value) and on the sum of all volumes of the day imbalance volumes applied to all users (absolute value)

Country/ Balancing zone	Type of WDO applied	GY 2017/18	GY 2018/19
Austria	Portfolio based [1]	WDO volumes: 351 564 MWh Total imbalance volumes: 1 490 013 MWh	WDO volumes: 261 332 MWH Total imbalance volumes: 1 765 928 MWh
Belgium/Luxembourg H-gas area	System wide	WDO volumes: 279 GWh EOD volumes: 1.391,39 GWh	WDO volumes: 97,7 GWh until 29/09/2019 EOD volumes: 1.585 GWh until 29/09/2019
Belgium/Luxembourg L-gas area		WDO volumes: 84,1 GWh EOD volumes: 465 GWh	WDO volumes: 33,8 GWh until 29/09/2019 EOD volumes: 423,14 GWh until 29/09/2019
Germany	Portfolio based [2]	GASPOOL: WDO volumes: 0 kWh. Total volume applicable to daily imbalance charges: 5.608.190.179 kWh. NCG: WDO volumes: 2.583.684.547 kWh. Total volume applicable to daily imbalance charges: 9.414.015.259 kWh.	GASPOOL: WDO volumes: 2.940.000 kWh. Total volume applicable to daily imbalance charges: 5.124.206.077 kWh. NCG: WDO volumes: 1.569.272.920 kWh (Data up to 31.07.2019). Total volume applicable to daily imbalance charges: 8.255.591.344 kWh (Data up to 31.07.2019).
Netherlands-GTS	System wide	WDO volumes: 3.313.963 MWh Total Daily imbalance volumes: 14.574.396 MWh (sum of the absolute value of all POSses of all shippers)	WDO volumes: 4.257.753 MWh Total Daily imbalance volumes: 18.311.400 MWh (sum of the absolute value of all POSses of all shippers)

[1] The network user is directly responsible to balance its position and the BGR receives notifications on the status of the balancing portfolios. The balancing incentive mark-up should constitute an incentive to nominate in a balanced manner. It is the responsibility of the BGR to nominate in a balanced manner.

[2] The balancing group manager receives within day information about his RLM offtakes from the MAM and upon request within day metering data for RLM customers assigned to his balancing group directly from the DSO/TSO. Using this information and having the possibility of re-/nomination and sending trade notifications on an hourly basis the balancing group manager is able to keep his balancing group balanced within the gas day.

Table 13. Within day imbalance fee methodology and thresholds applied

Country/ Balancing zone	GY 2017/18	GY 2018/19
Austria	The method applies only if the market area is undersupplied in total and if the hourly Balancing Group imbalances show a short position. The calculation is based on hourly imbalances and not on cumulative hourly imbalances on a given gas day. Either 0.09 or 0.9 Cent/kWh is charged for hourly short positions. If a BGR has deviations in its BG during a month being in sum not more than 50 euro (per month), the amount will not be charged. More detailed information can be found in the annually reports on balancing incentive mark-ups, in the general terms and conditions of the MAM and in the background an analysis document concerning the amendments of the methodology. The documents are published under **https://www.aggm.at/en/network-information/reports/balancing-report**.	Same as GY 2017/18
Belgium/ Luxembourg H-gas area	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 shippers who caused the market excess or shortfall hence reflecting the market value for that residual natural gas at that time. All grid users and the market position is settled to 0 at the end of each gas day	Same as GY 2017/18
Belgium/ Luxembourg L-gas area	[1] The network user is directly responsible to balance its position and the BGR receives notifications on the status of the balancing portfolios. The balancing incentive mark-up should constitute an incentive to nominate in a balanced manner. It is the responsibility of the BGR to nominate in a balanced manner. Such a settlement is executed in the following 5 steps: 1. Identification of the quantity to be settled: market shortfall [market excess]; 2. Identification of grid users causing imbalance (all grid users having at that time an individual balancing position contributing to the market shortfall [market excess]) and their proportional contribution to the market imbalance; 3. Correction of causing grid users balancing position proportional to their contribution to the market imbalance (Fluxys Belgium delivers gas to the grid user in case of shortfall and offtakes gas from the grid user in case of excess); 4. Transaction initiation by Fluxys Belgium for the purchase [sale] of a quantity of gas compensating for the market shortfall or the market excess (see section); 5. A financial settlement at a price calculated in accordance with the Access Code for Transmission.	Same as GY 2017/18
Germany (NCG/GP)	For every hour within the gas day the market area managers shall net the inputs into the balancing group that are relevant for balancing within that hour against the offtakes from the balancing group that are relevant for balancing. The hourly net total shall be cumulated over the gas day. There shall be no separate consideration of inputs or offtakes at individual points. The following allocation groups shall be distinguished: a) For points that are balanced according to the principle of "allocated as nominated" or "allocated as measured", the allocated quantity is considered for each hour. No tolerances shall be allowed. b) For IDM exit points, either the hourly share of the actual daily offtake quantity distributed evenly (as a flat daily profile) over the entire gas day or the actual offtake quantity for each hour is relevant. The actual offtake quantity is the allocated offtake quantity without calorific value correction but with replacement value correction. A tolerance is allowed for both subgroups: the amount of the tolerance for each hour is +/– 7.5 percent of the daily offtake quantity. c) For NDM exit points, the hourly share of the daily quantity of the standard load profile distributed evenly over the entire gas day (as a flat daily profile) is relevant. No tolerances shall be allowed. If cumulating the hourly net totals results in a surplus or short supply after taking into account any allowable tolerance (within day flexibility quantity), the balancing group manager is obliged to pay the market area manager a flexibility charge in euros per MWh. The following applies to the imposition of the flexibility charge: 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. No flexibility charge shall be imposed on gas days on which these criteria are not fulfilled. b) The market area managers shall calculate the amount of the flexibility charge for the gas day in question as the quotient of the costs for the flexibility balancing gas weighted by quantity and the quantity of flexibility balancing gas.	Same as GY 2017/18
Netherlands – GTS	GTS buys/sells on the exchange the volume of gas that is needed to bring back the system to the border of the dark green zone. This is the 'safe' zone for GTS with regard to the integrity of the transport system and therefore this is the minimum amount GTS needs to buy/sell to be able to guarantee the integrity of the system. The buy/sell transaction is distributed among the causers of the imbalance pro rata the imbalance of the individual causers. The price used is the volume weighted average price that GTS has paid/received on the exchange.	Same as GY 2017/18

[1] Thresholds value can be found in Access Code for Transmission – Attachment A – Market Thresholds: http://www.fluxys.com/belgium/en/Services/Transmission/Contract/~/media/Files/Services/Transmission/TermsConditions/Version20161020/ACT_EN_Approved_20161020.ashx

Table 14. Compliance with WDO requirements as set by Article 26 of BAL NC

Country/ Balancing Zone	Avoidance of barriers on cross-border trade	Adequate level of information of NU's inputs/ off-takes	Relation of costs incurred by NUs with their end of gas day position
Austria	The charges are very small and only applicable in less scenarios (only short positions). It lies within the balance responsible party's own hands if the balancing incentive charges apply.	At least hourly information on the status of the balancing portfolio, starting with the initial nominations at 2pm for the next gas day. Imbalances are communicated immediately (IMBNOT response) and the market participants have the possibility to balance themselves within the respective lead time.	Finally the sum of the balancing incentive mark-up is returned to the network users via lower tariffs in regard to the TSO.
Belgium (both areas)	Charges are proportional to the balancing position	Network user receive every hour an update on their provisional (for past hours) or forecasted (for coming hours) balancing position for the whole gas day. Information for the next gas day (D+1) is available as from 15h on gas day D	Settlement only to bring global market position to threshold value, no settlment to 0. Thresholds defined such that WDO balancing actions remain an exception while ensuring the integrity of the transmission network
Germany (NCG/GP)	Details provided at the following link: https://www.bundesnetzagentur.de/DE/Service-Funktionen/Beschlusskammern/1_GZ/BK7-GZ/2014/BK7-14-0020/BK7-14-020_Beschluss_englisch.pdf (page 63 – 64)	Details provided at the following link: https://www.bundesnetzagentur.de/DE/Service-Funktionen/Beschlusskammern/1_GZ/BK7-GZ/2014/BK7-14-0020/BK7-14-020_Beschluss_englisch.pdf (page 64 – 66)	Details provided at the following link: https://www.bundesnetzagentur.de/DE/Service-Funktionen/Beschlusskammern/1_GZ/BK7-GZ/2014/BK7-14-0020/BK7-14-020_Beschluss_englisch.pdf (page 66 – 69)
Netherlands (GTS)	The Dutch code process involves all stakeholders and the results are laid down in this NRA-decision https://www.acm.nl/nl/publicaties/publicatie/12879/Implementatie-Netcode-Balancing/	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 at 22 minutes past the hour. NUs can manage their POS to manage their exposure.	This is ensured by the LFS fee (0,4 % × abs (POS) × neutral gas price). Network users pay the LFS fee if their position is not zero at the end of the gas day. The LFS fee is set such that this criterion is met. After the introduction of formal changes in the national balancing code from 2019, the fee will change from a fee with a fixed parameter (0,4 %) to a fee formula which will be adjusted each year based on recent data.

Cost reflectiveness	Non-financial settlement to NUs' position equal to zero	Economic and Efficiency benefits procured by WDOs
If the MAM does not need to take measures for physical balancing, the sum of the balancing incentive mark-up is returned to the network users via lower tariffs.	Differences from not successful Balancing Actions of MAM can result to an Carry Forward Account which will be balanced on the next possible auction.	If the MAM does not need to take measures for physical balancing, the sum of the balancing incentive mark-up is returned to the network users via lower tariffs. So the costs have to be carried by those BGRs, who caused the imbalances (and used the available infrastructure more than all the others).
Imbalance charge price is determined using provisions of article 22	Settlement only to bring global market position to threshold value and each grid user is settled proportionally to its contribution to the imbalance	Due to the characteristics of the BeLux market (high transit), it is requested that network users follow their balancing position hour after hour. It is mandatory for network integrity
Details provided at the following link: https://www.bundesnetzagentur.de/DE/Service-Funktionen/Beschlusskammern/1_GZ/BK7-GZ/2014/BK7-14-0020/BK7-14-020_Beschluss_englisch.pdf (page 69 – 73)	Details provided at the following link: https://www.bundesnetzagentur.de/DE/Service-Funktionen/Beschlusskammern/1_GZ/BK7-GZ/2014/BK7-14-0020/BK7-14-020_Beschluss_englisch.pdf (page 73)	Details provided at the following link: https://www.bundesnetzagentur.de/DE/Service-Funktionen/Beschlusskammern/1_GZ/BK7-GZ/2014/BK7-14-0020/BK7-14-020_Beschluss_englisch.pdf (page 74)
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.	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 osition of a NU to zero.	Each day we determine, based on the predicted physical system load, which part of the available linepack can be reserved for the balancing role of the shippers. This linepack is represented for the shippers as the dark green zone and is the safe area. The total balance position of all shippers is represented by the System balance signal (SBS). The individual position of a shippers portfolio is represented by its portfolio imbalance signal (POS). The sum of all POSses equals the SBS. Goal of the balancing system is to keep the SBS in the dark green zone. The shippers as a group are responsible for keeping the system in the safe dark green zone and only in case they fail to that, GTS has to take action. Both SBS and all POSses are determined every 5 minutes. In this way shippers can prevent balancing actions by steering their POS in such a direction that the SBS will stay in the dark green zone. If the SBS is outside the dark green zone, the system is out of the safe zone and GTS issues a balancing action to force the system back into the safe dark green zone. If the system was short, GTS buys gas on an exchange and all shippers with a short position will receive that gas on a pro rata basis. This will influence their POS, but it will never be forced to zero. Mutatis mutandis for a long situation. (ref. article 24). The costs of a balancing action are market based and only transferred to the causers of a SBS outside the dark green zone. This approach results in an efficient use of the grid. Our shippers are really satisfied with this approach and did not mention any significant disadvantage to us. GTS did not report negative effects on the liquidity of the TTF.

ANNEX VI: INFORMATION PROVISION (FORECAST AND ALLOCATION)

Table 15. Frequency of forecast updates or of apportionment of measured flows per day (status as of 1 Oct 2019)

Country	Information model/unit	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
		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]
Austria	BASE CASE	24, hourly update for final customers above 50 MW contracted capacity	n/a	1	3
BeLux	VARIANT 1	24	24	n/a	24
Bulgaria	VARIANT 1	24	24	n/a	24
Czech Republic	BASE CASE		n/a	1	2
Germany-GP[1]	VARIANT 2	24	n/a	1	n/a
Germany-NCG[2]	VARIANT 2	2	n/a	1	n/a
Denmark/Sweden	BASE CASE	5	n/a	1	5
Estonia	No information model in place	n/a	n/a	n/a	n/a
Greece	No info model in place	n/a	n/a	n/a	n/a
Spain	BASE CASE	2	n/a	1	2
France	BASE CASE	every hour	n/a	every hour	every hour
Croatia	No info model in place	2			
Hungary	VARIANT 1	2	1		
Ireland	BASE CASE	24	n/a	1	4
Italy	BASE CASE	2	n/a	1	2
Latvia	BASE CASE	3	n/a	1	2
Lithuania	BASE CASE		n/a	1	2
Netherlands	VARIANT 1	287	n/a	n/a	287
Northern Ireland	BASE CASE	n/a	n/a	1	3
Poland H-gas area	BASE CASE	2	n/a	1	2
Poland L-gas area	BASE CASE	2	n/a	1	2
Poland TGPS[3]	Not applicable according to Art. 34	Not applicable according to Art. 34	Not applicable according to Art. 34	Not applicable according to Art. 34	Not applicable according to Art. 34
Portugal	VARIANT 2	3	n/a	1	n/a
Romania	BASE CASE	2	n/a		
Slovakia	No info model in place	24			
Slovenia	VARIANT 1	2	2	n/a	2
UK-GB	BASE CASE	GB does not have any intra-day meters	n/a	4	5

[1] (Remark from previous IM Q. 2016:) According to BAL NC, the MAM/TSO shall provide network users with a minimum of two updates of their measured flows on the gas day D. This obligation has already been implemented with the determination on business processes for change of gas supplier (GeLi Gas determination, annex to decision BK7-06-067 of 20 August 2007 as amended on 28 October 2011, "Metered value transmission" process, 1.6.2., no. 4), because on this basis hourly metered values are to be sent to the network users every hour – not just updates on two occasions. On the basis of these information, the grid users are able to undertake within day trades at the virtual trading point or physical nominations and thus to balance their portfolio.

[2] See above

[3] According to Article 34.1 of BAL NC (For intraday metered inputs to and off-takes from the balancing zone, where a network user's allocation equals its confirmed quantity, the transmission system operator shall not be obliged to provide information other than the confirmed quantity)

Table 16. Time of provided forecasts or of provided apportionment of measured flows per day (status as of 1 Oct 2019)

Country	Information model/unit	Intraday metered inputs and off-takes (Art.34)		Daily metered off-takes (apply only for variant 1) (Art.35.2)		Non daily metered off-takes (Art.36.1)		
						D-1		D
		1st 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]	1st 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]	1st 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]
Austria	BASE CASE	7:25 (for final customers above 50 MW contracted capacity)	8:25 (for final customers above 50 MW contracted capacity)	n/a	n/a	12:00:00 PM	12:00:00 PM	5:00:00 PM
BeLux	VARIANT 1	7:00:00 AM	8:00:00 AM	7:00:00 AM	8:00:00 AM	n/a	7:00:00 AM	8:00:00 AM
Bulgaria	VARIANT 1	hourly	hourly	hourly	hourly	n/a	hourly	hourly
Czech Republic	BASE CASE			n/a	n/a	1:00:00 PM	1:00:00 PM	11:00:00 PM
Germany-GP	VARIANT 2	The network users receive the 1st update at 16:00. Additionally network users can request for updates immediately after the first hour of the gas day.	The network users receive the 1st update at 19:00. Additionally network users can request for updates immediately after the first hour of the gas day.	n/a	n/a	12:00:00 PM	n/a	n/a
Germany-NCG	VARIANT 2	The network users receive the 1st update at 16:00. Additionally network users can request for updates immediately after the first hour of the gas day.	The network users receive the 1st update at 19:00. Additionally network users can request for updates immediately after the first hour of the gas day.	n/a	n/a	12:00:00 PM	n/a	n/a
Denmark/ Sweden	BASE CASE	data not available	data not available	data not available	data not available	data not available	data not available	data not available
Estonia	No information model in place	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Greece	No info model in place	14.00 CET	19.00 CET	n/a	n/a	n/a	n/a	n/a
Spain	BASE CASE	14:00 CET	21:00 CET	n/a	n/a	13:00 CET	14:00 CET	21:00 CET
France	BASE CASE	every hour	every hour	n/a	n/a	2:00:00 PM	every hour	every hour
Croatia	No info model in place	6:00-10:00	6:00-18:00					
Hungary	VARIANT 1	data not available	data not available	data not available	data not available	data not available	data not available	data not available
Ireland	BASE CASE	6:00:00 AM	7:00:00 AM	n/a	n/a	8:30:00 AM	8:30:00 AM	15:30/20:30/23:30
Italy	BASE CASE	2:00:00 PM	6:00:00 PM	n/a	n/a	1:00:00 PM	2:00:00 PM	6:00:00 PM
Latvia	BASE CASE	n/a	n/a	n/a	n/a	11:30:00 AM	12:15:00 PM	3:15:00 PM
Lithuania	BASE CASE	n/a	n/a	n/a	n/a	10:00 UTC	11:00 UTC	13:00 UTC
Netherlands	VARIANT 1	6:05:00 AM	6:10:00 AM	n/a	n/a	n/a	6:05:00 AM	6:10:00 AM
Northern Ireland	BASE CASE	n/a	n/a	n/a	n/a	By 08:00 D-1	By 12:00 D	By 16:00 D
Poland H-gas area	BASE CASE	1:00:00 PM	5:00:00 PM	n/a	n/a	12:00:00 PM	1:00:00 PM	7:00:00 PM
Poland L-gas area	BASE CASE	1:00:00 PM	5:00:00 PM	n/a	n/a	12:00:00 PM	1:00:00 PM	7:00:00 PM
Poland TGPS	Not applicable according to Art. 34	Not applicable according to Art. 34	Not applicable according to Art. 34	Not applicable according to Art. 34	Not applicable according to Art. 34	Not applicable according to Art. 34	Not applicable according to Art. 34	Not applicable according to Art. 34
Portugal	VARIANT 2	1:00:00 PM	8:00:00 PM	n/a	n/a	12:00:00 PM	n/a	n/a
Romania	BASE CASE	11:00:00 AM(UTC)	7:00:00 PM(UTC)	n/a	n/a			
Slovakia	No info model in place	6:20 GMT	7:20 GMT					
Slovenia	VARIANT 1	2:00:00 PM	8:00:00 PM	2:00:00 PM	8:00:00 PM	n/a	2:00:00 PM	8:00:00 PM
UK-GB	BASE CASE	n/a	n/a	n/a	n/a	UK time: 12:00 14:00 18:00 01:00	UK time: 12:00	UK time: 15:00 18:00 21:30 01:00

Table 17. Period of provided allocation (status as of 1 Oct 2019)

Country	Information model/unit	Initial allocation for day D		Final allocation for day D (Art.37.3)
		No interim measures (Art.37.1)	Interim measures applied (Art.37.2)	
		number of days or hours after day D	number of days or hours after day D	number of days or hours after day D
Austria	BASE CASE	aggregated provisional consumption per supplier (for final customers above 10 MW contracted capacity) 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
BeLux	VARIANT 1	35 minutes after ending of D (06:35)	n/a	35 minutes after ending of D (06:35)
Bulgaria	VARIANT 1	0	6 hours	5 days after month M
Czech Republic	BASE CASE	7 hours		11 days after the end of month
Germany-GP	VARIANT 2	7 hours		M + 2 M – 10 WD
Germany-NCG	VARIANT 2	7 hours		M + 2 M – 10 WD
Denmark/Sweden	BASE CASE	data not available	data not available	data not available
Estonia	No information model in place	n/a	n/a	n/a
Greece	No info model in place	7 hours	n/a	10 working days
Spain	BASE CASE	1 day		m(month) + 15
France	BASE CASE	D + 1	n/a	10th working day M + 1
Croatia	No info model in place	4 hour		10 days after month
Hungary	VARIANT 1	data not available	data not available	data not available
Ireland	BASE CASE		D+1	D + 5
Italy	BASE CASE	1 day	n/a	28 days after the end of the month M for each day of the month M
Latvia	BASE CASE	D + 1 (7 hours)		5th working day of next month
Lithuania	BASE CASE	6 hours		3 working days after the end of the month
Netherlands	VARIANT 1	15 minutes after ending of D (06:15)	n/a	15 minutes after ending of D (06:15)
Northern Ireland	BASE CASE	n/a	1	5
Poland H-gas area	BASE CASE	6 h	n/a	Final allocations are provided without undue delay after the end of the gas month such settlement relates to, and no later than to 26th day of the following gas month.
Poland L-gas area	BASE CASE	6 h	n/a	Final allocations are provided without undue delay after the end of the gas month such settlement relates to, and no later than to 26th day of the following gas month.
Poland TGPS	Not applicable according to Art. 34	Not applicable according to Art. 34	Not applicable according to Art. 34	Final allocations are provided no later than to 7th day of the following gas month.
Portugal	VARIANT 2	24 h		4th working day of M + 1
Romania	BASE CASE	7 hours		7 hours
Slovakia	No info model in place		1 day	10 days after the end of month
Slovenia	VARIANT 1	4 hours	n/a	10 working days in month M + 1 for the month M
UK-GB	BASE CASE	D + 1	n/a	Entry = M + 15 Exit = D + 5

ANNEX VII: INTERIM MEASURES

Interim measures (according to Articles 47 – 49) applied in each country

	Countries	Description of Product/ Procurement criteria	Starting date(s) of product	Name of the products offered
Balancing platform	DE-NCG (terminated as of 1 January 2018)	The product is characterised by an offer of the balancing gas supplier to deliver (SystemBUY) or take-off /SystemSELL) gas at specific network points of the system. The offers are submitted on a short-term basis and may be called by NCG at any time in case of a specific balancing demand. The product would only be used by NCG in case of a balancing demand at a specific network point that could not be covered by a locational zone-based STSP via the trading platform or in case offers at the trading platform are not available.	In case of a call on a "Rest of the Day" basis, the product needs to be realised by the balancing gas suppliers within 3 hours from the start of the next full hour after the call. In case of a call on a "Day Ahead" basis, the product needs to be realised starting from the beginning of the next gas day.	Locational Market Transaction "Commodity" (Rest of the Day / Day Ahead)
	DE-GP (terminated as of 1 January 2018)	The product is characterised by an offer of the balancing gas supplier to deliver (SystemBUY) or take-off /SystemSELL) gas in the high-cal gas area or the low-cal gas area. Optional when needed by GASPOOL, the offer has to be placed for a given network area. The offers are submitted on a short-term basis and may be called by GASPOOL at any time in case of a specific balancing demand. The product would only be used by GASPOOL in case of a balancing demand at a specific network point that could not be covered by a locational zone-based STSP via the trading platform or in case offers at the trading platform are not available.	The product needs to be realised by the balancing gas suppliers within 3 hours from the start of the next full hour after the call.	Locational Market Transaction "Commodity" (Rest of the Day)
	GR	Data not available	Data not available	Data not available
	PL- H (terminated as of 1 April 2019)	Service consisting in the supply of gaseous fuel by URB at a specific entry point (PWE) – the interconnection points with the adjacent TSOs located in the countries which are not EU members. The service can be provided only by URB, which has a capacity allocation at a given entry point (PWE) ("locational product").	n/a – the service was not used in the period covered by this questionnaire	Delivery of gaseous fuel at the entry point (PWE)
	PL-L (terminated as of 1 April 2019)	a) Service consisting in the supply of gaseous fuel by URB at the virtual exit point (WPWYOSP). b) Service consisting in the off-take of gaseous fuel by URB at the virtual entry point (WPWEOSP). c) Service consisting in the supply of gaseous fuel by URB at a specific entry point (PWE). The service can be provided only by URB, which has a capacity allocation at a given entry point (PWE) ("locational product") d) Service involving the off-take of gas fuel by URB at a specific exit point (PWY). The service can be provided only by URB, which has a capacity allocation at a given exit point (PWY) ("locational product") e) Service whereby URB does not deliver a specific quantity of gas fuel at the entry point ("locational product") and off-takes the same quantity of gaseous fuel from TSO at a virtual entry point (WPWEOSP)	(for all services) n/a – the service was not used in the period covered by this questionnaire	a) delivery of gaseous fuel at a virtual exit point (WPWYOSP) b) off-take of gaseous fuel at a virtual entry point (WPWEOSP) c) delivery of gaseous fuel at the entry point (PWE) d) off-take of gaseous fuel at an exit point (PWY) e) reduction of Gaseous Fuel supply at an entry point (PWE)
	PL- TGPS (terminated as of 1 April 2019)	a) Service consisting in the supply of gaseous fuel by URB at the virtual exit point (WPWYOSP). b) Service consisting in the off-take of gaseous fuel by URB at the virtual entry point (WPWEOSP). c) Service consisting in the supply of gaseous fuel by URB at a specific entry point (PWE). The service can be provided only by URB, which has a capacity allocation at a given entry point (PWE) ("locational product") d) Service involving the off-take of gas fuel by URB at a specific exit point (PWY). The service can be provided only by URB, which has a capacity allocation at a given exit point (PWY) ("locational product") e) Service whereby URB does not deliver a specific quantity of gas fuel at the entry point ("locational product") and off-takes the same quantity of gaseous fuel from TSO at a virtual entry point (WPWEOSP)	(for all services) n/a – the service was not used in the period covered by this questionnaire	a) delivery of gaseous fuel at a virtual exit point (WPWYOSP) b) off-take of gaseous fuel at a virtual entry point (WPWEOSP) c) delivery of gaseous fuel at the entry point (PWE) d) off-take of gaseous fuel at an exit point (PWY) e) reduction of Gaseous Fuel supply at an entry point (PWE)
	SE (terminated as of 1 April 2019)	a) https://www.swedegas.com/Our_services/system_responsibility/balance_responsibility/conditions_and_fees b) https://www.swedegas.com/Our_services/system_responsibility/balance_responsibility/conditions_and_fees	a) Within week at committed network users' discretion in a presented plans from them b) As stated in request	a) Weekly trades b) Regulating trades
	SK	Balancing platform	DA title or WD title as required.	Data not available

Conditions for the TSO(s) to use it	Frequency of procurement	Price methodology	Procurement date (=binding commitment of contracting parties)	Duration of product
The balancing platform is only used when STSPs via the trading platform are not suitable to cover a balancing demand or are not available.	Balancing gas suppliers can submit offers for individual days at any time. Offers may be called by NCG on a "Rest of the Day" or "Day Ahead" basis.	Balancing gas suppliers need to indicate a commodity charge when submitting an offer. There is no demand charge for such offers.	Balancing gas suppliers can submit offers for individual days at any time and are able to withdraw or change them until they have been called by NCG.	Daily
The balancing platform is only used when STSPs via the trading platform are not suitable to cover a balancing demand or are not available.	Balancing gas suppliers can submit offers for individual days at any time. Offers may be called by GASPOOL on a "Rest of the Day" or "Day ahead" basis.	Balancing gas suppliers need to indicate a commodity charge when submitting an offer. There is no demand charge for such offers.	Balancing gas suppliers can submit offers for individual days at any time and are able to withdraw or change them until they have been called by GASPOOL.	Daily
Data not available	Data not available	Data not available	Data not available	Data not available
Lack of gas supply at a given physical entry point and lack of suitable locational products on trading platform.	daily, WD	With respect to offers concerning the same system service, the selection shall be made according to the price criterion. With respect to offers for the delivery of gaseous fuel, the TSO shall first accept the offer with the lowest price for a given number of packages. In the case of multiple identical offers, the TSO shall accept them evenly on a pro rata basis to the extent required to balance the demand within the transmission system.	n/a – the service was not used in the period covered by this questionnaire	daily and/or WD
(for all services) Insufficient liquidity of the wholesale gas market for the STPS, or lack of possibility to order on the market on reasonable terms temporal or locational services required by TSO.	(for all services) daily, WD	(for all services) With respect to offers concerning the same system service, the selection shall be made according to the price criterion. With respect to offers for the delivery of gaseous fuel, the TSO shall first accept the offer with the lowest price for a given number of packages. In the case of multiple identical offers, the TSO shall accept them evenly on a pro rata basis to the extent required to balance the demand within the transmission system.	(for all services) n/a – the service was not used in the period covered by this questionnaire	(for all services) daily and/or WD
(for all services) Insufficient liquidity of the wholesale gas market for the STPS, or lack of possibility to order on the market on reasonable terms temporal or locational services required by TSO.	(for all services) daily, WD	(for all services) With respect to offers concerning the same system service, the selection shall be made according to the price criterion. With respect to offers for the delivery of gaseous fuel, the TSO shall first accept the offer with the lowest price for a given number of packages. In the case of multiple identical offers, the TSO shall accept them evenly on a pro rata basis to the extent required to balance the demand within the transmission system.	(for all services) n/a – the service was not used in the period covered by this questionnaire	(for all services) daily and/or WD
a) A request for bids is passed to every network user the first weekday in a week b) A request for bids is passed to every network user when a short term action is needed	a) Weekly b) when needed	a) Prices derived from the mean of the best bids covering twice the requested amount b) According to accepted bids	a) The second weekday in a week b) As stated in request	a) Within week b) As stated in request
Eustream records network users' Preliminary daily imbalance quantity of the actual gas day, final Daily imbalance quantities and gas quantities related to balancing actions executed by Eustream on the System imbalance account. Balancing actions are carried out depending on the zone in which the System imbalance occurs.	Quarterly	Auctions	Trading orders that have been paired are considered as traded at the moment the BP Operator sends Confirmation on Traded Gas Volumes to BP User.	DA, WD

Interim measures (according to Articles 47 – 49) applied in each country

	Countries	Description of Product/ Procurement criteria	Starting date(s) of product	Name of the products offered	Conditions for the TSO(s) to use it	Frequency of procure-ment	Price methodology	Procurement date (= binding commitment of contracting parties)	Duration of product
Alterna-tive to a balancing platform	BG	Balancing service	01. Nov	Gas from Storage Facility	presence of physical imbalance	Monthly	https://bulgartransgaz.bg/en/pages/balansirane-143.html	01. Nov	Monthly/ daily
	RO (termi-nated as of 16 April 2019)	BRM STEGN Gas Exchange-natural gas, traded on daily basis for bal-ancing purpose	10.01.17	BRM STEGN Gas Exchange- natural gas, traded on daily basis for balancing purpose	presence of physical imbalance	NA	Price of buy/sell transactions based on STEGN procedure http://www.brm.ro/storage/app/media/uploaded-files/pages-from-procedura-stegn-aviz-452014-part1.pdf	NA	DA, WD (non-standard product)
	LV (termi-nated as of 1 October 2018)	Data not available	Data not available	Data not available	Data not available	Data not available	Data not available	Data not available	Data not available
	SK	a) Balancing service b) PEGAS CEGH Gas Exchange	DA title or WD title as required.	a) Balancing service b) PEGAS CEGH Gas Exchange	a) Eustream nominates gas quanities based on System Imbalance zone b) NA	a) Annual b) NA	a) Price or buy/sell transactions based on CEGHIX index of PEGAS CEGH Gas Exchange b) https://www.cegh.at/media/1157/factsheet_ceghix.pdf	a) 9/5/2017 b) NA	DA, WD

Interim measures (according to Articles 47 – 49) applied in each country

	Countries	Price methodology	Price calculation
Interim daily imbalance charge	BG	administrated price	Data not available
	GR	price derived from balancing platform trades	Data not available
	IE (terminated as of 1 April 2019)	proxy for a market price	In the absence of an Irish Balancing Point derived SAP, the SAP in the adjacent system is used. Formula used for the price derivation: UK-GB SAP +/– 5 %
	LV (terminates ad of 1 October 2018)	Data not available	Data not available
	PL-L (terminated as of 1 April 2019)	price derived from balancing platform trades	Marginal pricing mechanism is based on a price derived from transactions concluded on the balancing platform. The marginal sell price is set as the lower of the following variables: ◢ The lowest price from transactions concluded on the balancing platform for gas day n; ◢ The weighted average price of gas in transactions concluded on the balancing platform for gas day n, minus 10 %. The marginal buy price is the higher of the following variables: ◢ The highest price from transactions concluded on the balancing platform for gas day n; ◢ The weighted average price of gas in transactions concluded on the balancing platform for gas day n, plus 10 %. In case when no transactions are concluded on the balancing platform with respect to the gas day, the prices established for the previous gas day apply. Until the moment when the first transaction is concluded on the balancing platform the weighted average price of low-methane gas bought by the TSO for technological purposes is applied.
	PL-TGPS (terminated as of 1 April 2019)	proxy for a market price	Marginal Purchase Price (KCK) is calculated as the multiplication of the factor 1.1 and the higher of the two following prices: ◢ weighted average price from all transactions of TGE session of the Day-Ahead Market (customised product for high methane balancing area) decreased by transportation costs from the TGPS to the high methane balancing area through the connection point PWP (under the daily product on the firm basis), Marginal Selling Price (KCS) is calculated as the multiplication of the factor 0.9 and the lower of the two following prices: ◢ weighted average price from all transactions of TGE session of the Day-Ahead Market (customised product for high methane gas balancing area) decreased by transportation costs from the TGPS to the high methane balancing area through the connection point PWP (under the daily product on the firm basis), ◢ weighted average price from all transactions of the EEX session of the Day-Ahead Market increased by transportation costs to the SGT through the connection point Mallnow (under the daily product on the firm basis). ◢ weighted average price from all transactions of the EEX session of the Day-Ahead Market increased by transportation costs to the TGPS through the connection point Mallnow (under the daily product on the firm basis).
	RO (terminated as of 16 April 2019)	proxy for a market price	PMC = max (CMMPC, PMPC × 110 %) marginal purchase price PMV = min (CMMPV, PMPV × 90 %) marginal sales price
	SK	price derived from balancing platform trades	https://tis.eustream.sk/TisWeb/#/?nav=gi.trf
	SE (terminated as of 1 April 2019)	price derived from balancing platform trades	https://www.swedegas.com/Our_services/system_responsibility/balance_responsibility/conditions_and_fees
	UK-NI	proxy for a market price	Positive Imbalance – An Imbalance Charge shall be payable to it equal to the sum of: (a) Quantity Within Tolerance × Daily Gas Price; plus (b) MIQ (Aggregate NI Imbalance – Imbalance Tolerance Quantity) × Psmps, where Psmps is the lower of: (i) the Daily Gas Price multiplied by 0.7; or (ii) the System Marginal Sell Price on the relevant Gas Flow Day D (as defined in the GB Uniform Network Code). Negative Imbalance – An Imbalance Charge shall be payable by the Shipper equal to the sum of: (a) Quantity Within Tolerance × Daily Gas Price; plus (b) MIQ (Aggregate NI Imbalance – Imbalance Tolerance Quantity) × Psmps where Psmpb is the higher of: (i) the Daily Gas Price multiplied by 1.5; or (ii) the System Marginal Buy Price on the relevant Gas Flow Day D (as defined in the GB Uniform Network Code).

PART 2

THIRD ENTSOG REPORT ON EFFECT MONITORING OF THE BALANCING NETWORK CODE

2019

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". Furthermore, it requires ENTSOG to inform ACER about its findings and to include the results of the analysis in its Annual Report.

This Third Effect Monitoring Report covers the effect of the BAL NC implementation after the deadline of 16 April 2019 set by the BAL NC for the termination of interim measures.

Six indicators are used to analyse the effect of the implementation of the BAL NC during GY 2017/2018 and GY 2018/2019:

1. **Indicator BAL.1:** TSO balancing through short-term standardised products (STSPs) vs. total TSO balancing actions;
2. **Indicator BAL.2.1:** TSO balancing volume as % of market volume;
3. **Indicator BAL.2.2:** TSO balancing volume as % of domestic consumption;
4. **Indicator BAL.3:** Net TSO balancing volume vs. domestic consumption;
5. **Indicator BAL.4:** Net imbalance volume of network users vs. domestic consumption;
6. **Indicator BAL.5:** Average network users' cost of being balanced by the TSO.

For a better presentation of the results, the analysed countries and their respective balancing zones are clustered into three groups related to their chosen implementation deadline as follow:

- **Cluster 2015:** AT, BE/LU, DE, DK, FR, HU, NL, SI and UK-GB (10 countries);
- **Cluster 2016:** CZ, ES, HR, IT and PT (5 countries);
- **Cluster 2019[1]:** BG, GR, IE, LT, LV, PL, SE, SK, RO and UK-NI + EE[2] (11 countries).

1 In Germany, in addition to a trading platform, a balancing platform has been established until 1 January 2018. In order to avoid duplication, Germany is clustered only once in Cluster 2015.

2 Estonia held a derogation on 1 October 2019 according to Article 49 of the Gas Directive. Notwithstanding the derogation, Estonia participated in this monitoring report on a voluntary basis.

Main findings of the Report:

- The **indicator BAL.1** is calculated by dividing the total quantity of gas traded by the TSO for each Short-Term Standardised Product (STSP) traded for balancing purposes by the total volume of all TSO's balancing actions. Therefore, the BAL.1 indicator shows the weight of each STSP (title products, locational products, temporal products, temporal-locational products) over the total volume traded by the TSOs via balancing actions. The percentage volume of other balancing tools (i.e. balancing services) over the total TSO action volume is also calculated for completeness.

  Analysing the yearly evolution of indicator BAL.1, it can be observed that the countries grouped in Cluster 2015 (thus that implemented the BAL NC by the first application date) relied mostly or almost exclusively on title products bought or sold on trading platform(s) in both Gas Year (GY) 2017/18 and GY 2018/19. The 5 countries belonging to the Cluster 2016 also show an increase in the use rate of title products from GY 2017/18 to GY 2018/19, especially of the Within Day products. The countries grouped in Cluster 2019 relied either on title products traded on trading platforms or balancing platforms and/or balancing services in the two observed GYs. Out of 11 countries in this Cluster, 5 countries (LT, LV, PL, RO and SE) terminated the use of interim measures in GY 2018/19.

- The **indicator BAL.2.1** is calculated by dividing the total quantity of gas traded by the TSO by the total gas market entry volume. The entry volume considers the quantity allocated at all entry points into a balancing zone including, e.g., virtual IPs, LNG, productions and storages.

  The fluctuation of indicator BAL.2.1 is overall close to 0 % in most of the balancing zones of the countries grouped in Cluster 2015. Results of indicator BAL 2.1 for the countries belonging to the Cluster 2016 show that the percentage of TSOs' balancing actions over the total entry market volume is quite modest (less than 3 %). Values for indicator BAL.2.1 in the countries belonging to Cluster 2019 have a more fluctuating range, but in most of the countries the percentage of TSO action volume is between 0 % – 2 %.

- In order to better compare the balancing zones by removing the effect of the cross-border flows and storage facilities, the **indicator BAL.2.2** is calculated by replacing the total entry volume with the domestic consumption (end-customers). The domestic consumption means the quantity of gas allocated at all exit points to end-customers on the transmission network and towards DSO/city gate, excluding exits to storage and IP exits.

  Looking at the countries that implemented the BAL NC by 2015, it can be observed that, even if in most of the balancing zones the values for BAL 2.2 stay in a limited range (0 % – 2 %) in both GY 2017/18 and GY 2018/19, there is a visible spread between the two indicators in some cases. Among the countries included in Cluster 2016, a similar trend of the indicators BAL.2.1 and BAL.2.2 is presented for the countries where cross-system flows have a high impact on the total market volume. Countries clustered in the last group (Cluster 2019) have a more fluctuating trend, although in most of the cases there is no difference between the percentage value of BAL.2.1 and BAL.2.2 due to the relatively small market size.

- **Indicator BAL 3** provides an additional analysis of the residual balancing role for the TSO, dividing the net TSO balancing volume by the domestic consumption. This indicator is combined with the **indicator BAL.4** which assesses the percentage of net network users' imbalance volume over the domestic consumption. Both indicators should be minimized and should have a limited range.

  Balancing zones in Cluster 2015 show relatively low values for both indicators, which means that both TSOs' actions and Network users' imbalance volume is in a limited range (< 1 %), while the range of fluctuation of the two indicators in countries belonging to Cluster 2016 is 1 % – (–1 %). In some of the countries that are currently under interim measures, for GY 2018/19, values for BAL 3 and BAL 4 indicators are significantly higher compared to GY2017/18. Among the countries in Cluster 2019 that terminated the interim measures, the values for BAL.3 and BAL.4 are generally aligned within a range of 1.50 % – (–1 %).

- In the Second BAL NC Effect Monitoring Report 2017 ENTSOG introduced indicator BAL.5 to assess the average marginal cost borne by the network users for being imbalanced. In this Third Effect Monitoring Report the same indicator is proposed with some minor adjustments in the calculation methodology.

  In the case of negative imbalances (Short Network Users) applying at the end of the gas day, the indicator BAL.5 is now derived by comparing the average Daily Buy price applied by the TSO with the average daily Weighted Average Price (WAP). In the case of positive imbalances (Long Network Users) applying at the end of the gas day, the indicator BAL.5 is now derived by comparing the average Daily Sell price applied by the TSO with the average daily Weighted Average Price (WAP).The aim is to indicate the additional cost (relative to the average daily WAP) for network users of being balanced by the TSO.

  The calculation of indicator BAL.5 has been performed only for the countries where the data was available. Countries that applied interim imbalance charge in GY 2017/18 (BG-N, BG-T, GR, IE, LV, PL-L, PL-TGPS, RO, SK) and GY 2018/19 (BG-N, BG-T, GR, PL-L, PL-TGPS, SK) are excluded from the calculation.

  Results of the calculation for GY 2017/18 show that in most of the balancing zones presented, the ratio between Average Daily Buy/Sell Price and average daily WAP varies between 5 % (Average Daily Buy price) and –5 % (Average Daily Sell price). Few cases where the deviation of both Average Daily Buy/Sell Prices from the average daily WAP is relatively higher than the other balancing zones can be observed in Germany, Portugal and Slovenia. This is due to the reasons described in detail in the analysis of the indicator BAL.5.

  Results for GY 2018/19 show that in most of the balancing zones presented, the ratio between Average Daily Buy/Sell Price and average daily WAP varies between 6 % (Average Daily Buy price) and –6 % (Average Daily Sell price). However, there are a few cases where the deviation of both Average Daily Buy/Sell Prices from the average daily WAP is relatively higher than the other balancing zones, namely Romania, Portugal and Slovenia.

1 INTRODUCTION AND PURPOSE

According to Article 8(8) of the Regulation (EC) 715/2009[3] 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". Furthermore, it requires ENTSOG to inform ACER about its findings and to include the results of the analysis in its Annual Report.

Monitoring the effect of the Balancing Network Code (BAL NC) implementation is not only a duty for ENTSOG but also a way to analyse how the rules set out in this NC affect the harmonisation of balancing regimes among EU Member States and the benefits that its implementation brings to the market.

The first BAL NC Effect Monitoring Report was published in 2016 and covered the effects of the BAL NC implementation per balancing zone 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 built upon the First Report and analysed the effects of the BAL NC implementation after the second deadline of 1 October 2016. This Third Effect Monitoring Report covers the effect of the BAL NC implementation after the deadline of 16 April 2019 set by the BAL NC for the termination of interim measures[4].

In order to produce the current report, ENTSOG collected data from 28 TSOs/Market Area Managers (MAMs) of the following 26 EU countries[5] (AT, BE, BG, CZ, DE, DK, EE, ES, FR, GR, HR, HU, IE, IT, LT, LU, LV, NL, PL, PT, RO, SE, SI, SK, UK-GB, UK-NI) where the BAL NC applies. Estonia held a derogation on 1 October 2019 according to Article 49 of the Gas Directive. Notwithstanding the derogation, Estonia participated in this monitoring report on a voluntary basis and Luxembourg provided information through the Belgian TSO (Fluxys)[6].

Data has been collected by means of a questionnaire. The Effect Monitoring questionnaire aimed at collecting information on the six indicators which enable analysing the effect of the implementation of the BAL NC during GYs 2017/2018 and 2018/2019:

1. **Indicator BAL.1:** TSO balancing through short-term standardised products (STSPs) vs. total TSO balancing actions;
2. **Indicator BAL.2.1:** TSO balancing volume as % of market volume;
3. **Indicator BAL.2.2:** TSO balancing volume as % of domestic consumption;
4. **Indicator BAL.3:** Net TSO balancing volume vs. domestic consumption;
5. **Indicator BAL.4:** Net imbalance volume of network users vs. domestic consumption;
6. **Indicator BAL.5:** Average network users' cost of being balanced by a TSO.

3 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)

4 In case Balancing Platforms (BPs) are implemented, Article 47(3) allows the Transmission System Operators to continue the operation of the Booking Platforms, following the approval by the National Regulatory Authority, for another period of no more than five years.

5 UK-GB and UK-NI are counted separately as two different TSOs operates in the two different balancing zones and the two areas are regulated by different NRAs.

6 As reported in the Implementation Monitoring Report, Belgium and Luxembourg merged in 2015 in one common balancing zone. See Chapter 2.2 of Implementation Monitoring Report for further details.

For a better presentation of the results, the analysed countries and their respective balancing zones are clustered into three groups related to their chosen implementation deadline as follow:

- **Cluster 2015:** AT, BE/LU, DE, DK[7], FR[8], HU, NL, SI and UK-GB (10 countries);
- **Cluster 2016:** CZ, ES, HR, IT and PT (5 countries);
- **Cluster 2019[9]:** BG, EE[10], GR, IE, LT, LV, PL, SE[11], SK, RO and UK-NI (11 countries).

As reported in the Implementation Monitoring Report, 6 countries (DE, LT, LV, PL, RO and SE) terminated the use of interim measures by April 2019. At 1 October 2019, interim measures are still in place in 5 countries (IE, BG, GR, SK and UK-NI). Figure 1 below shows the progressive termination of interim measures at 1 October 2019.

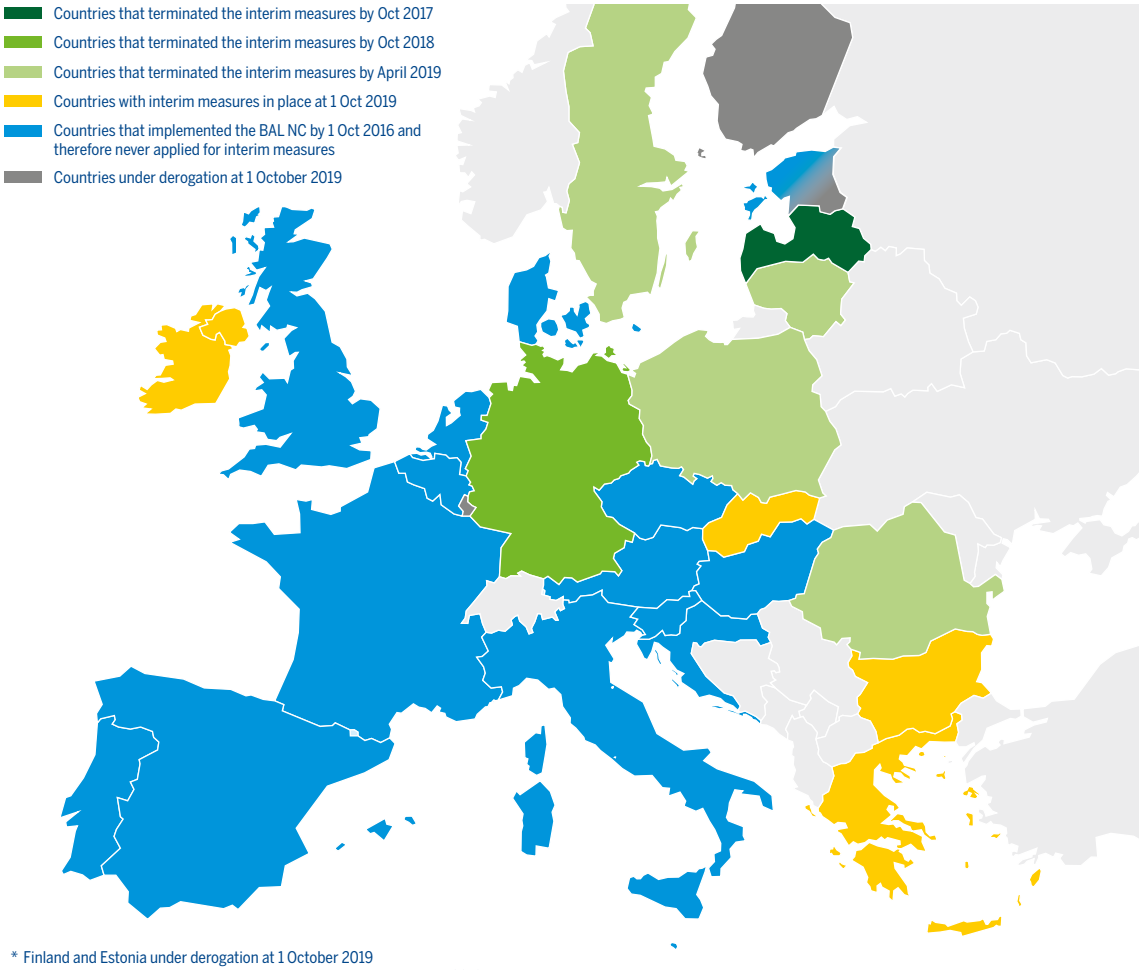


Figure 1. Interim measures at 1 October 2019

Further details on the countries and their respective balancing zones at 1 October 2019 are provided in Annex II.

7 Denmark and Sweden have merged in the Joint Balancing Zone after 1 April 2019. Results take into account the effect before and after the balancing zone merger.

8 France had two balancing zones in GY 2017/18 (PEG Nord and Trading Region South) and one balancing zone in GY 2018/19 (Trading Region France) after 1 November 2018.

9 In Germany in addition to a trading platform, a balancing platform has been applied as an interim measure. All other provisions of the BAL NC have been reported as implemented. In order to avoid duplication, Germany is clustered only once in 2015 Cluster.

10 Estonia held a derogation on 1 October 2019 according to Article 49 of the Gas Directive. Notwithstanding the derogation, Estonia participated in this monitoring report on a voluntary basis, For the purpose of presenting the indicators, Estonia is added to the 2019 Cluster.

11 This Cluster also includes the values for the Joint Balancing Zone – Denmark/Sweden, in order to show the evolution of the Swedish market after the balancing zone merger.

2 PRESENTATION OF THE RESULTS AND ANALYSIS OF THE EFFECT MONITORING INDICATORS

2.1 INDICATOR BAL.1: TSO BALANCING THROUGH SHORT-TERM STANDARDISED PRODUCTS VS. TOTAL TSO BALANCING ACTIONS

2.1.1 DESCRIPTION OF THE INDICATOR

Balancing by the TSO is conducted via balancing actions following the merit order (according to Article 9 of the BAL NC). Short Term Standardised Products (STSPs) higher ranked in merit order (title products) shall preferably be used instead of lower ranked balancing products (temporal, locational and temporal locational products).

The indicator BAL.1 is calculated by **dividing the total quantity of gas traded by the TSO for each STSP** traded for balancing purposes by the **total volume of all TSO's balancing actions.** Therefore, the BAL.1 indicator shows the weight of each STSP (title products, locational products, temporal products, temporal-locational products) over the total volume traded by the TSOs via balancing actions.

This assessment provides a clear indication of the degree to which balancing actions by the TSO have been performed using each STSP – and in particular using title products – compared to the overall TSO's balancing actions (including other STSPs, balancing services, interim measures). The percentage volume of other balancing tools (i.e. balancing services) over the total TSO action volume is also calculated for completeness.

Hence, this indicator gives an indication on how well the short-term gas balancing regime functions in each balancing zone.

BAL 1 Indicator	Definition
$STSP_n$ volume as % of total TSO balancing volume	The BAL.1 indicator is calculated per gas day by dividing the total volume of gas traded by the TSO for each STSP by the total volume of the TSO's actions. The calculation is done for each STSP according to the merit order (title, temporal, locational temporal locational). Distinction of the type of product used is also considered when available, i.e., between within-day (WD) products and day-ahead (DA) products. If no balancing actions have been undertaken by the TSO for the gas day, the BAL.1 indicator is 0 %. **Formula:** Total traded volume of $STSP_n$ by TSO (for balancing purposes) / Total TSO's balancing volume [in %]
Unit	$STSP_n$ volume of total TSO's balancing volume in %
Aim:	Maximization of title products % utilization rate, when possible.

Input data for Indicator BAL.1	Description
Total volume of title products:	The sum of gas volumes of the title products [buy + sell] which are used by the TSO for balancing purposes on a short-term wholesale market via a trading platform (Art. 10), where trade notifications are taken into account in its balancing system, following the merit order (Art. 9). **Formula:** Total volume of title products [in MWh] = ∑ volume of title products [buy + sell]
Total volume of locational products:	The sum of gas volumes of locational products [buy + sell] which are used by the TSO for balancing purposes on a short-term wholesale market via a trading platform (Art. 10), where trade notifications are taken into account in its balancing system, following the merit order (Art. 9). **Formula:** Total volume of locational products [in MWh] = ∑ volume of locational products [buy + sell]
Total volume of temporal products:	The sum of gas volumes of temporal products [buy + sell] which are used by the TSO for balancing purposes on a short-term wholesale market via a trading platform (Art. 10), where trade notifications are taken into account in its balancing system, following the merit order (Art. 9). **Formula:** Total volume of temporal products [in MWh] = ∑ volume of temporal products [buy + sell]
Total volume of temporal locational products:	The sum of gas volumes of temporal locational products [buy+sell] which are used by the TSO for balancing purposes on a short-term wholesale market via a trading platform (Art. 10), where trade notifications are taken into account in its balancing system, following the merit order (Art. 9). **Formula:** Total volume of temporal locational products [in MWh] = ∑ volume of temporal locational products [buy + sell]
Total volume of Balancing Services:	The sum of gas volumes [buy + sell] of all balancing services (according to Article 8) which are conducted by the TSO following the merit order (Art. 9) for balancing purposes. **Formula:** Total volume of Balancing Services [in MWh] = ∑ volume of balancing services [buy + sell]
Total volume of Interim Measures	The sum of gas volumes [buy + sell] of products traded under Interim Measures (STSPs on a balancing platform according to Article 47, and/or balancing services (according to Article 48) which are used by the TSO for balancing purposes. **Formula:** Total volume of Interim Measures [in MWh] = ∑ volume of Interim Measure [buy + sell]
Total volume of other balancing products	The sum of gas volumes [buy + sell] of all other balancing products (non-standardised balancing services) which are conducted by the TSO for balancing purposes, following the merit order (Art. 9). **Formula:** Total volume of other balancing products [in MWh] = ∑ volume of other balancing products [buy + sell]
Total TSO balancing volume	The sum of gas volumes [buy + sell] of all balancing products which are traded by the TSO via a trading and/or balancing platform for balancing purposes, following the merit order. **Formula:** Total TSO balancing volume [in MWh] = Total volume of $STSP_n$ [in MWh] + total volume of balancing services [in MWh] + Total volume of Interim Measures [in MWh]+ Total volume of other balancing products [in MWh].
Indicator BAL.1	Indicator BAL.1 (yearly) = ∑ (Total volume of $STSP_n$ for balancing purposes) / ∑ (total TSO balancing volume) [in %].

2.1.2 RESULTS AND ANALYSIS

Based on the data provided for GY 2017/18 and GY 2018/19, the indicator BAL.1 has been calculated on a yearly basis for 28 balancing zones in 26 countries[12]. The tables in Annex IV present the results of the calculation of indicator BAL.1 for these two Gas Years, for each balancing zone grouped in the 3 Clusters.

Figures 2 and 3 below show the values of BAL.1 for the countries belonging to Cluster 2015. Analysing the yearly evolution of the indicator, it can be observed that the countries belonging to the Cluster 2015 (thus that implemented the BAL NC by the first application date) relied mostly or almost exclusively on title products bought or sold on trading platform(s) in both GY 2017/18 and GY 2018/19.

All the 10 countries used WD title products and, additionally, Germany (in both NCG and GP balancing zones) and Slovenia also used DA title products. Other types of STSPs (locational, temporal and temporal locational products) were used in small percentage in Germany (DA and WD locational in DE-GP balancing zone) and the Netherlands (WD temporal).

12 The number of balancing zones differs between GY 2017/18 and GY 2018/19 due to the balancing zone mergers happened in the two gas years.

Figure 2. Yearly BAL.1 (%) Cluster 2015, GY 2017/18

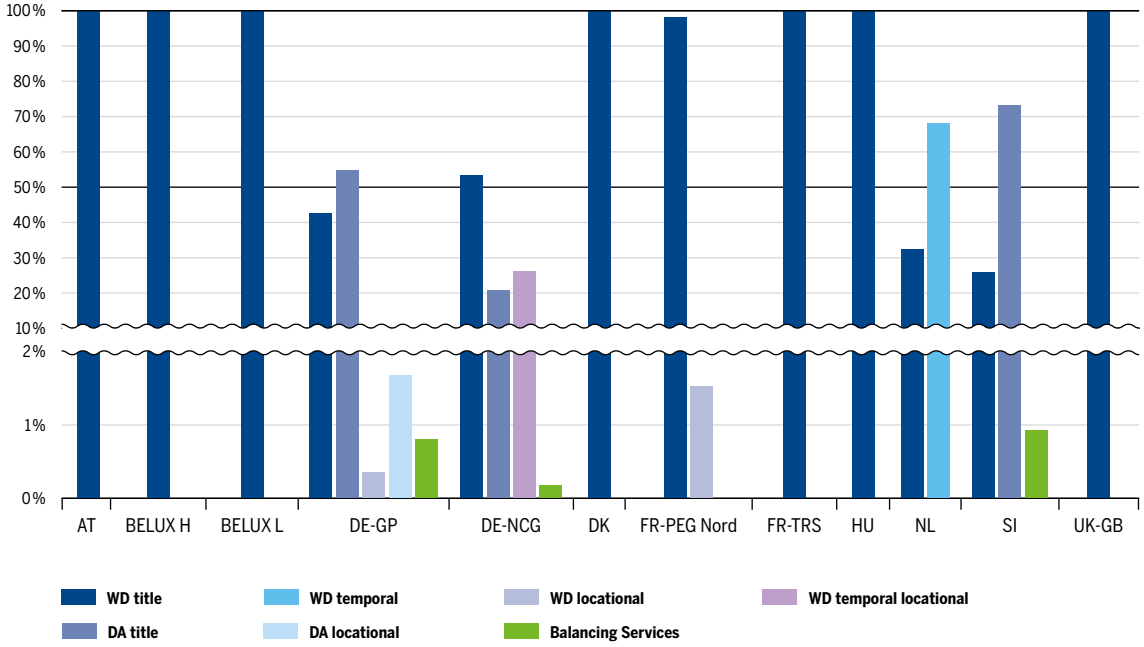
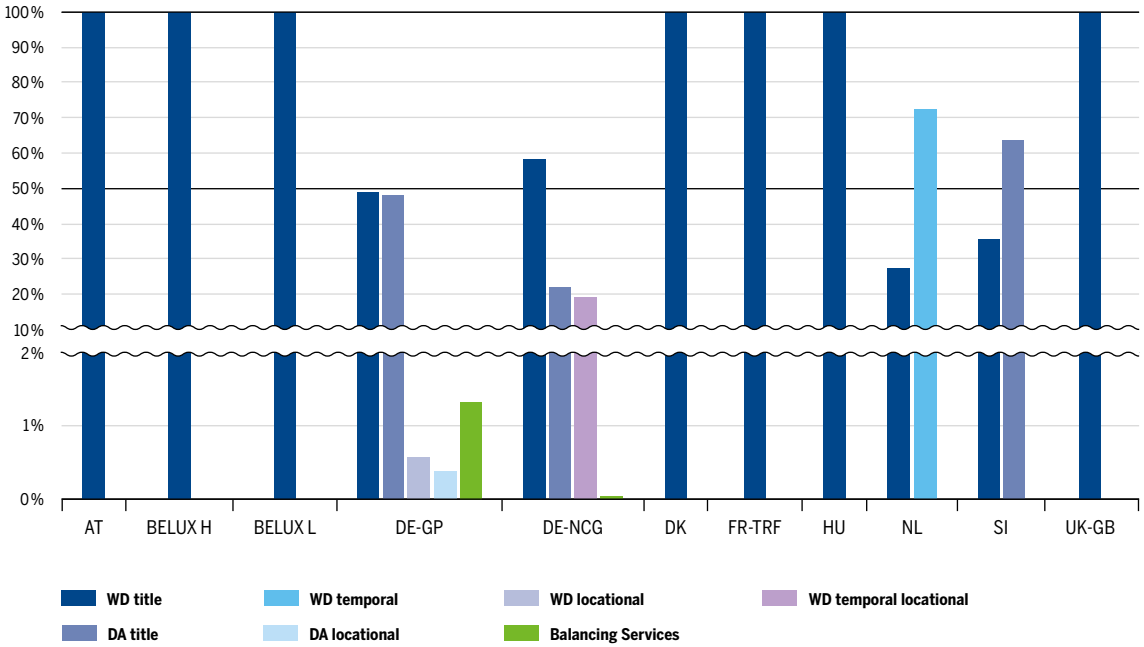


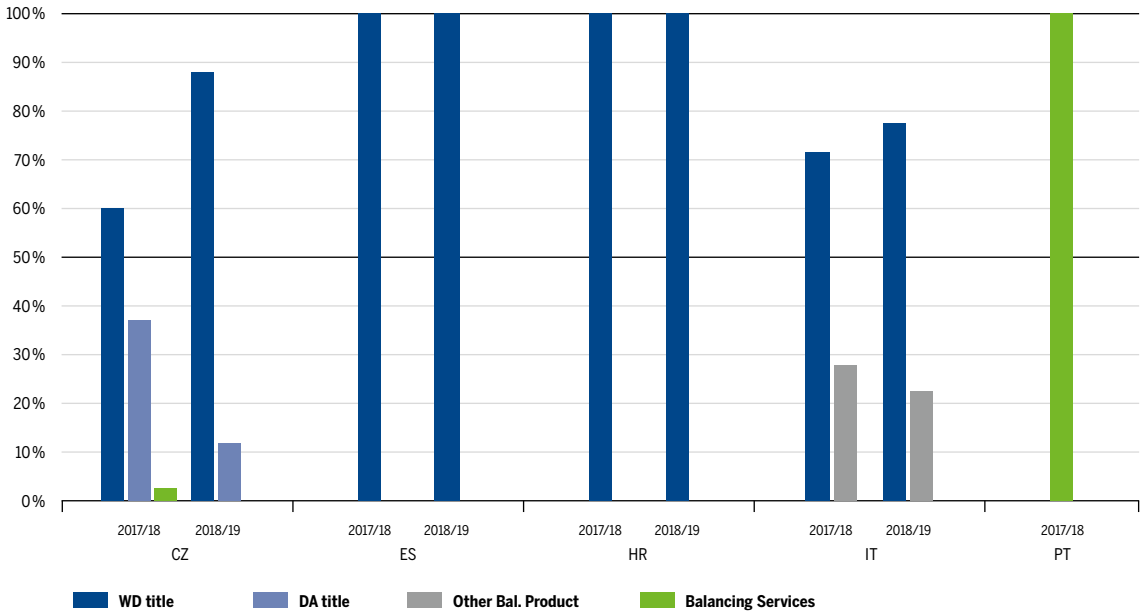
Figure 3. Yearly BAL.1 indicator (%) Cluster 2015, GY 2018/19



In particular, in Germany, the percentage of WD title products traded on the trading platform over the total TSO's balancing actions, increased by 11 % Year-on-Year (YoY) in both balancing zones. Conversely, the percentage of DA title products decreased by 12 % YoY in DE-GP balancing zone and increased by 10 % in DE-NCG balancing zone.

The 5 countries belonging to the Cluster 2016 (see Figure 4) also show an increase in the use rate of title products from GY 2017/18 to GY 2018/19, especially of WD products. In Czech Republic and Italy, the percentage of use of WD title products increased by 46 % in the former and 7 % in the latter, whilst in Croatia and Spain only WD products are used.

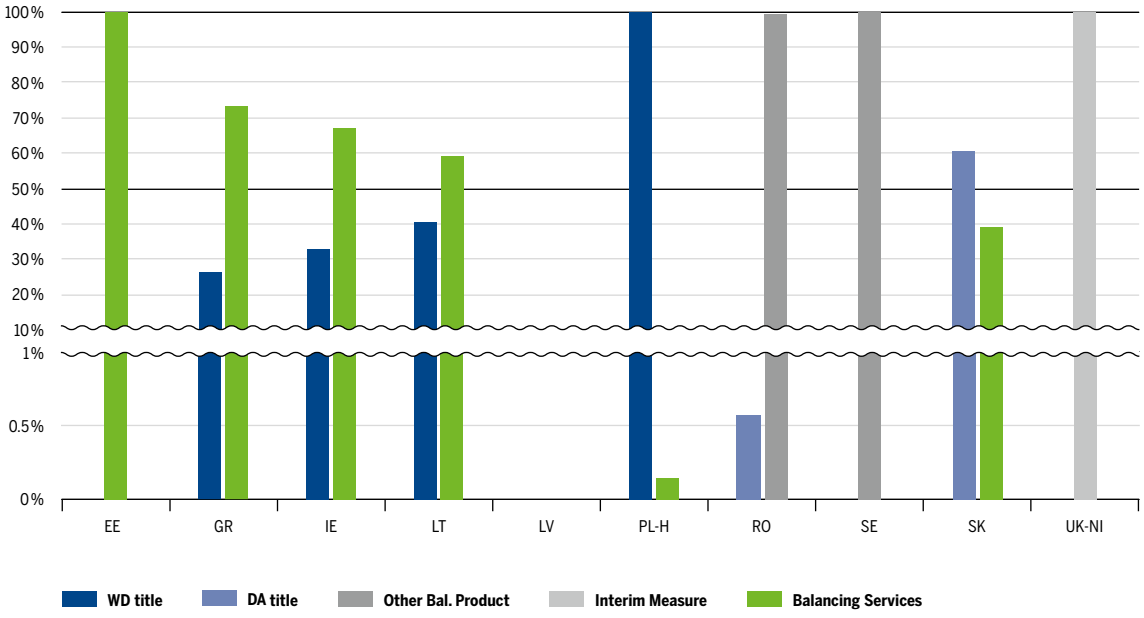
Figure 4. Yearly BAL. 1 indicator (%), Cluster 2016, GY 2017/18 and GY 2018/19



The countries grouped in the Cluster 2019 (Figures 5 and 6) relied both on title products traded on trading platforms or balancing platforms and/or balancing services in the two observed Gas Years. Out of 11 countries in this Cluster, 6 countries (DE[13], LT, LV, PL, RO and SE) terminated the use of interim measures in GY 2018/19.

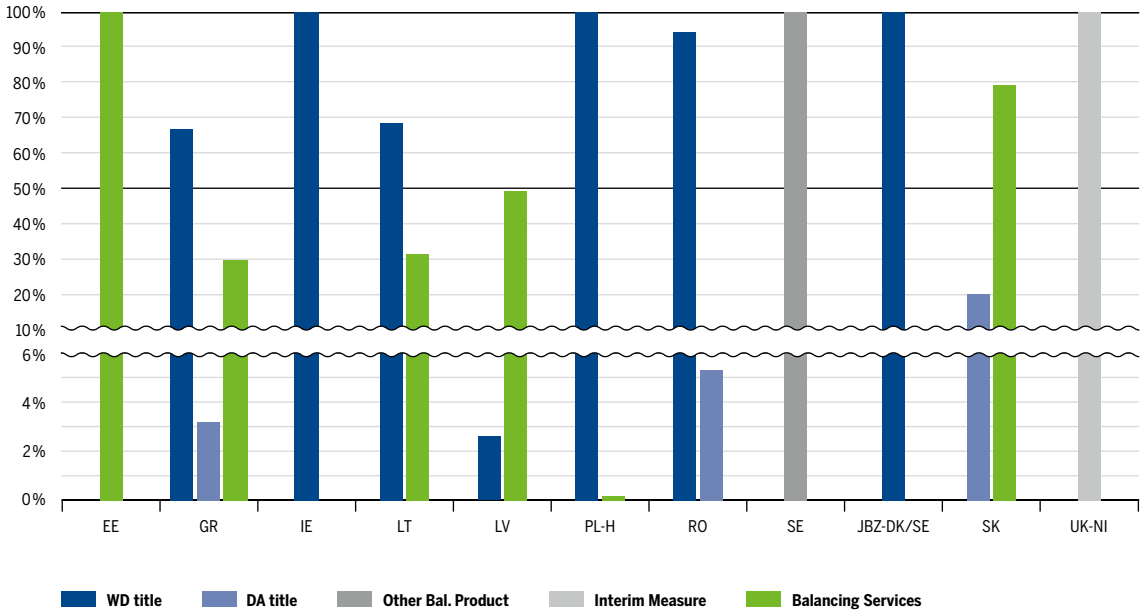
In Latvia there were no TSO balancing actions for GY 2017/18, while in GY 2018/19 balancing actions were performed mostly via balancing services. In Lithuania, the percentage of use of WD title products raised from 41 % to 69 %. Romania did not use balancing services neither in GY 2017/18 nor GY 2018/19.

Figure 5. Yearly BAL.1 indicator (%), Cluster 2019, GY 2017/18



13 The use of a balancing platform established as interim measure was terminated the 1 January 2018 but already no products were exchanged since 30 September 2015.

Figure 6. Yearly BAL.1 indicator (%), Cluster 2019, GY 2018/19



A table with the yearly percentage of days in which the TSO bought/sold gas and the percentage of gas volume purchased/sold compared to the overall TSO's actions, is presented in Annex V in order to show the evolution YoY in each balancing zone[14].

14 In the case of France, results consider the volume traded from 1 November 2018. Since that date, the two balancing zones PEG Nord and Trading Region South merged into the Trading Region France (TRF) balancing zone. In the case of Denmark and Sweden, after 1 April 2019 the Danish and the Swedish balancing zones merged into the Joint Balancing Zone (JBZ).

2.1.3 PRICE DIFFERENTIAL BETWEEN TSO BUY/SELL ACTIONS

A comparison of the yearly average BUY/SELL price for TSO actions is provided for countries in each Cluster where data is available. The yearly average prices consider only the price for STSPs traded by the TSO for balancing purposes.

Figures 7 and 8 show the results for the countries that implemented the BAL NC by October 2015 (Cluster 2015). It can be observed that the BUY price for WD title products is generally higher than the SELL price, although the price spread between buy and sell actions is quite modest, except in a few instances i.e.. DE-GP and DE-NCG in the locational products and HU in the WD title products. On average, sell and buy prices for WD title products decrease from GY 2017/18 to GY 2018/19. The prices for Denmark consider only the trades made until 1 April 2019, i.e., before the balancing zone merger with Sweden.

Figure 7. Average TSO BUY/SELL prices for STSPs trades (€/MWh), Cluster 2015, GY 2017/18 (two-page spread)

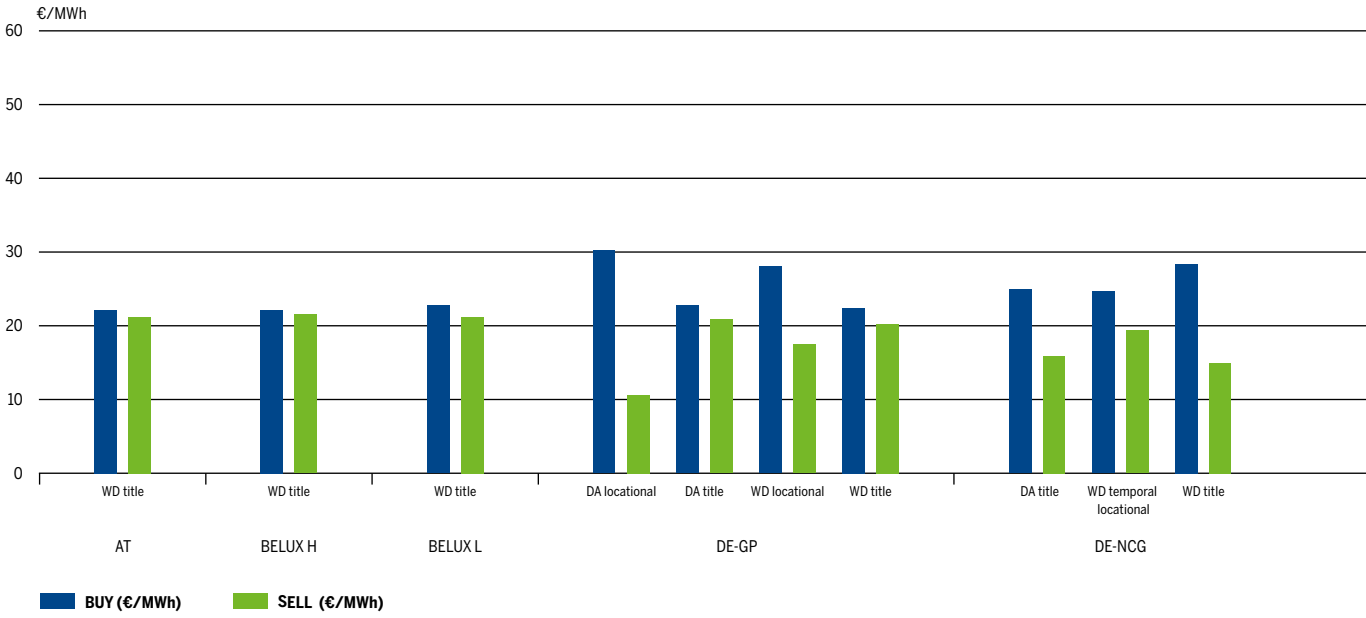
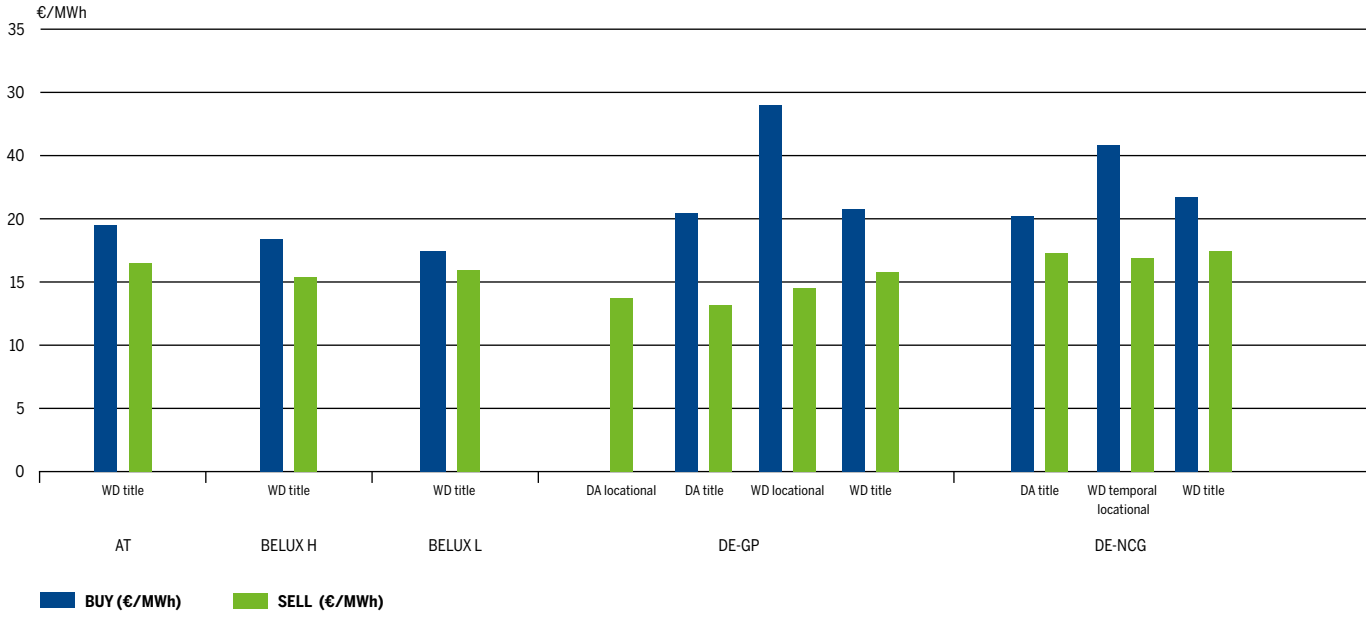
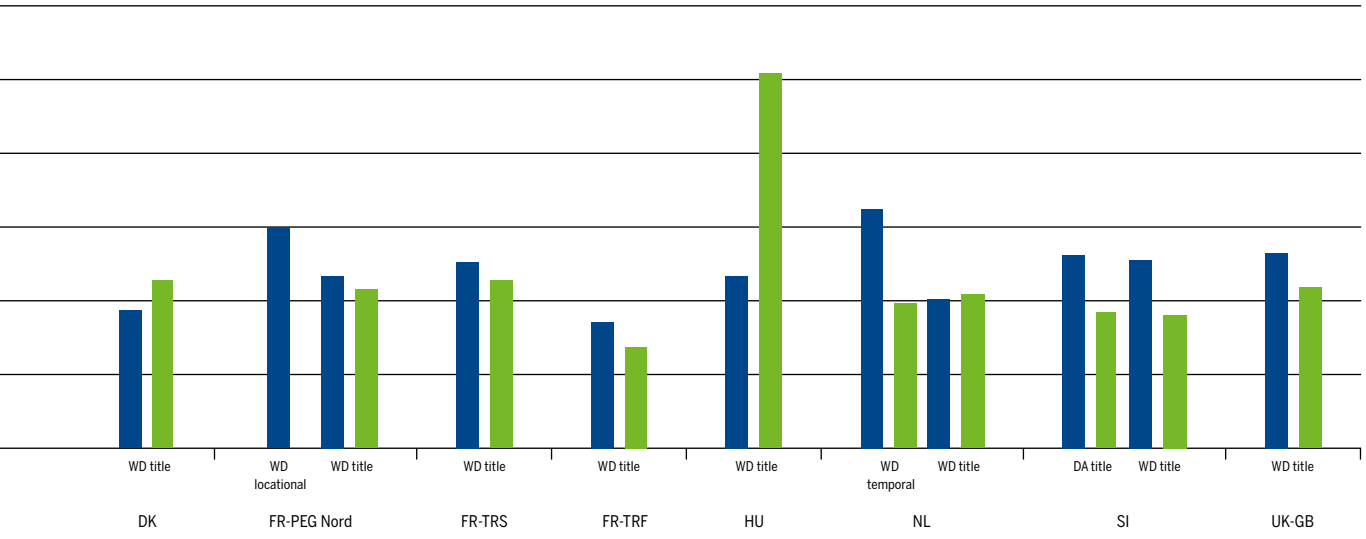
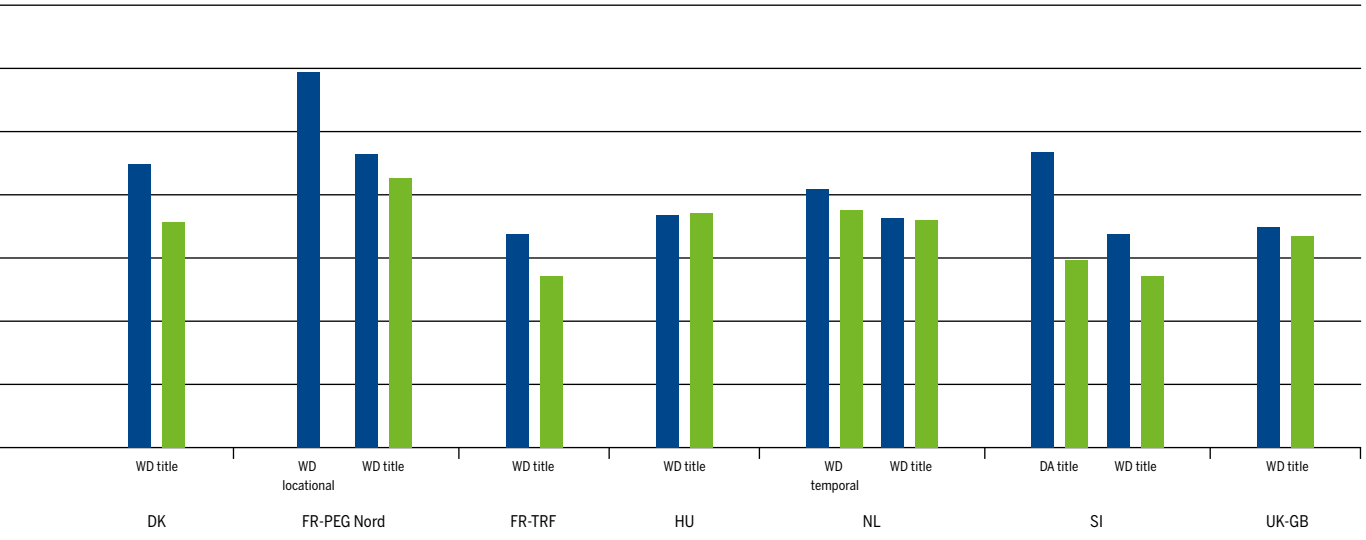


Figure 8. Average TSO BUY/SELL prices for STSPs trades (€/MWh), Cluster 2015, GY 2018/19 (two-page spread)




WD title
WD locational
WD title
WD title
WD title
WD title
WD temporal
WD title
DA title
WD title
WD title
DK
FR-PEG Nord
FR-TRS
FR-TRF
HU
NL
SI
UK-GB


WD title
WD locational
WD title
WD title
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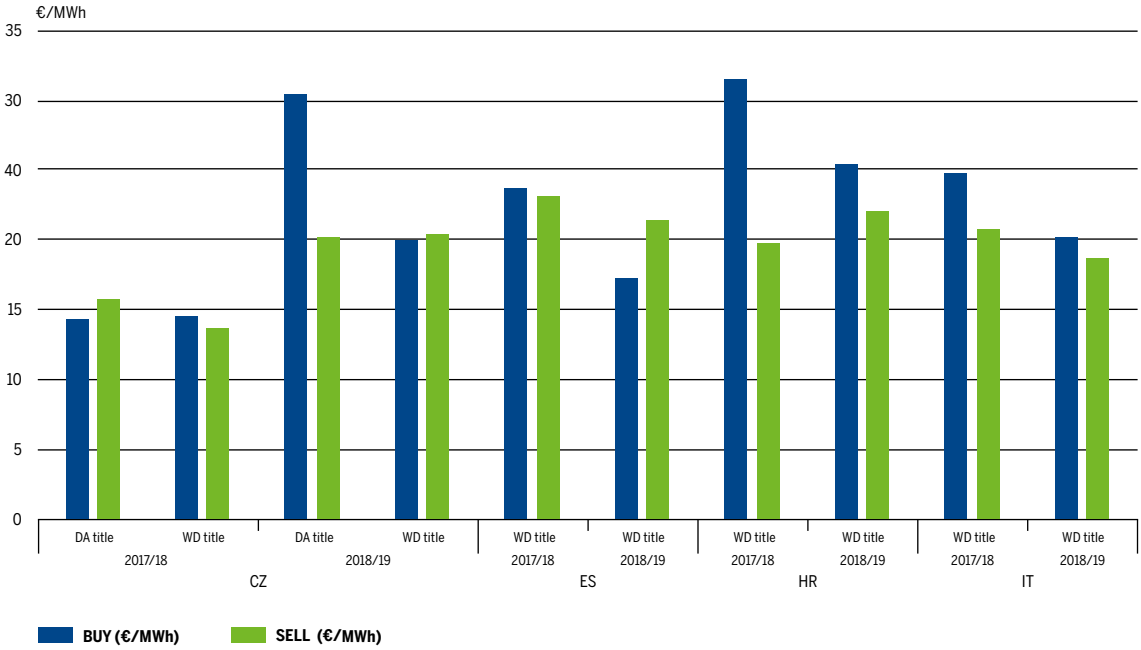
WD temporal
WD title
DA title
WD title
WD title
DK
FR-PEG Nord
FR-TRF
HU
NL
SI
UK-GB

Looking at the countries belonging to Cluster 2016 (Figure 9), the price differential between BUY and SELL actions is slightly higher compared to countries in Cluster 2015. In Croatia and Italy, the buy price for WD title products is on average higher than the sell price. However, a decreasing trend can be observed from GY 2017/18 to GY 2018/19. In Czech Republic also DA title products are traded, and it can be observed a significant price increase for both BUY/SELL prices YoY. In Spain in GY2018/19, where the majority of sell balancing actions were performed in the first half of the GY where the prices were higher than in the second half, SELL actions had a higher price than BUY actions, whilst the average prices decreased compared to GY 2017/18. Portugal undertook balancing actions in GY 2017/18 only through balancing services, therefore these prices are not taken into consideration in the analysis.

Figure 9. Average TSO BUY/SELL prices for STSOs trades (€/MWh), Cluster 2016



For the countries in Cluster 2019 (Figures 10 and 11) where STSPs are traded, it can be observed a high price spread between buy and sell actions, and in most of the cases the BUY price is significantly higher than the sell price. In some cases, e.g. Lithuania and Romania in GY 2017/18 and Lithuania and Latvia in GY 2018/19, only buy actions for WD/DA title products have been performed on average. A price decrease can be observed for both BUY and SELL trades from GY 2017/18 to GY 0218/19.

Figure 10. Average TSO BUY/SELL prices for STSPs trades (€/MWh), Cluster 2019, GY 2017/18

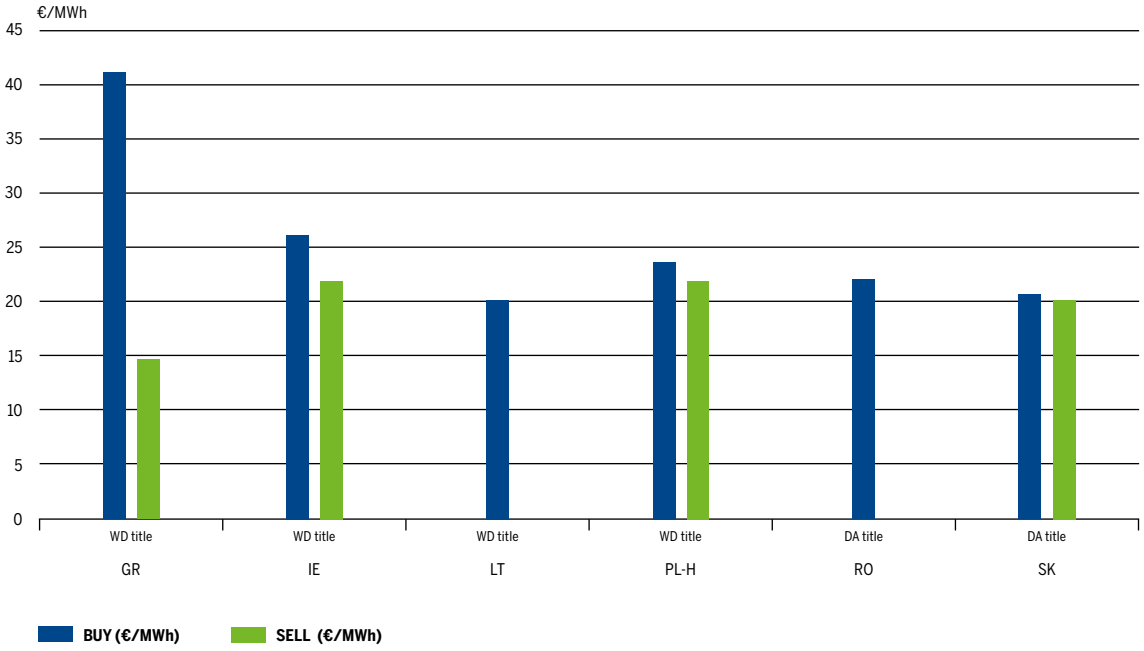
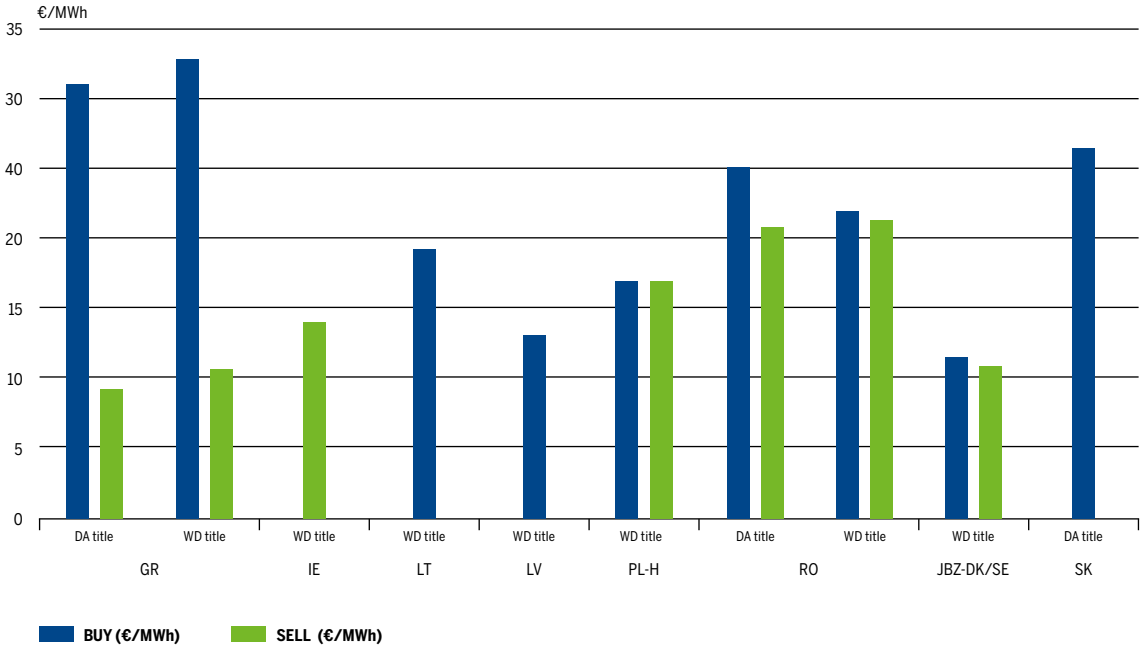


Figure 11. Average TSO BUY/SELL prices for STSPs trades (€/MWh), Cluster 2019, GY 2018/19



2.2 INDICATORS BAL.2.1: TSO BALANCING VOLUME AS % OF MARKET VOLUME VS. INDICATOR BAL.2.2: TSO BALANCING VOLUME AS % OF DOMESTIC CONSUMPTION

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, ENTSOG proposes two indicators to assess how much gas is traded by the TSO for balancing purposes: indicator BAL.2.1 and indicator BAL.2.2.

2.2.1 DESCRIPTION OF THE INDICATOR BAL.2.1: TSO BALANCING VOLUME AS % OF MARKET VOLUME

The first indicator BAL.2.1 is calculated by dividing the **total quantity of gas traded by the TSO** by the **total gas market volume.** The entry volume into the balancing zone is used as the market volume. The entry volume considers the quantity allocated at all entry points into a balancing zone including, e.g., virtual IPs, LNG, production and storages.

Indicator BAL.2.1	Definition
BAL.2.1: Total TSO balancing volume vs. All entry volume (as market volume)	The BAL.2.1 indicator is calculated by dividing the total quantity of gas traded by the TSO for balancing purposes (within a balancing zone) by the market volume. If no balancing actions have been undertaken by the TSO for the gas day, the BAL.2.1 indicator is 0 %. **Formula:** Indicator BAL.2.1 = Total quantity of gas traded by the TSO(s) for balancing purposes within a balancing zone / Market volume [in %].
Unit	TSO balancing volume as % of market volume
Aim:	Decrease of % rate, minimized value.

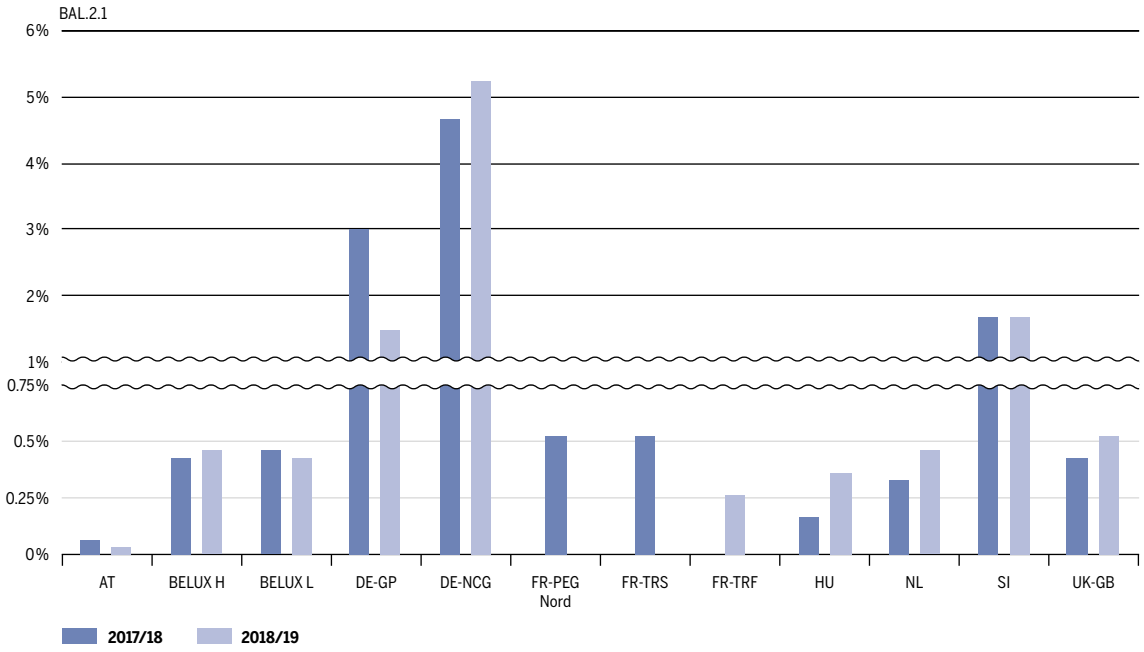
Input data for Indicator BAL.2.1	Description
Total TSO balancing volume (equivalent to Input data for BAL.1)	Total TSO balancing volume is calculated as the sum of gas volumes [buy + sell] of all balancing products which are used by the TSO (following a merit order) for balancing purposes. **Formula:** Total TSO balancing volume [in MWh] = ∑ volume of $STSP_n$ [in MWh] + ∑ volume of balancing services [in MWh] + ∑ volume of Interim Measures [in MWh] + ∑ volume of other balancing products [in MWh].
Market Volume	Market volume means the quantity allocated at all entry points into a balancing zone (or market area) including, e.g., virtual IPs, LNG, production and storages [in MWh].
Indicator BAL.2 .1	Indicator BAL.2.1 (yearly) = ∑ TSO balancing volume in MWh)/ ∑ Market volume in MWh [in %]

2.2.2 RESULTS AND ANALYSIS OF INDICATOR BAL.2.1

Results of the calculation of indicator BAL.2.1 are shown in Annex VI for both GY 2017/18 and GY 2018/19 in order to display the yearly evolution, for the countries listed in each Cluster.

The fluctuation of BAL.2.1 is overall below 1 % in most of the balancing zones of the countries belonging to Cluster 2015 (Figure 12). In particular, a slightly decrease YoY in the TSO's actions can be observed in 6 balancing zones in 4 countries (AT, BELUX-L, DE-GP, FR and SI). In other balancing zones (BELUX-H, HU, DE-NCG, DK[15], NL, UK-GB), the percentage of the TSO's balancing volume over the market volume increased in GY 2018/19 compared to GY 2017/18.

Figure 12. Indicator BAL 2.1 (%) Cluster 2015



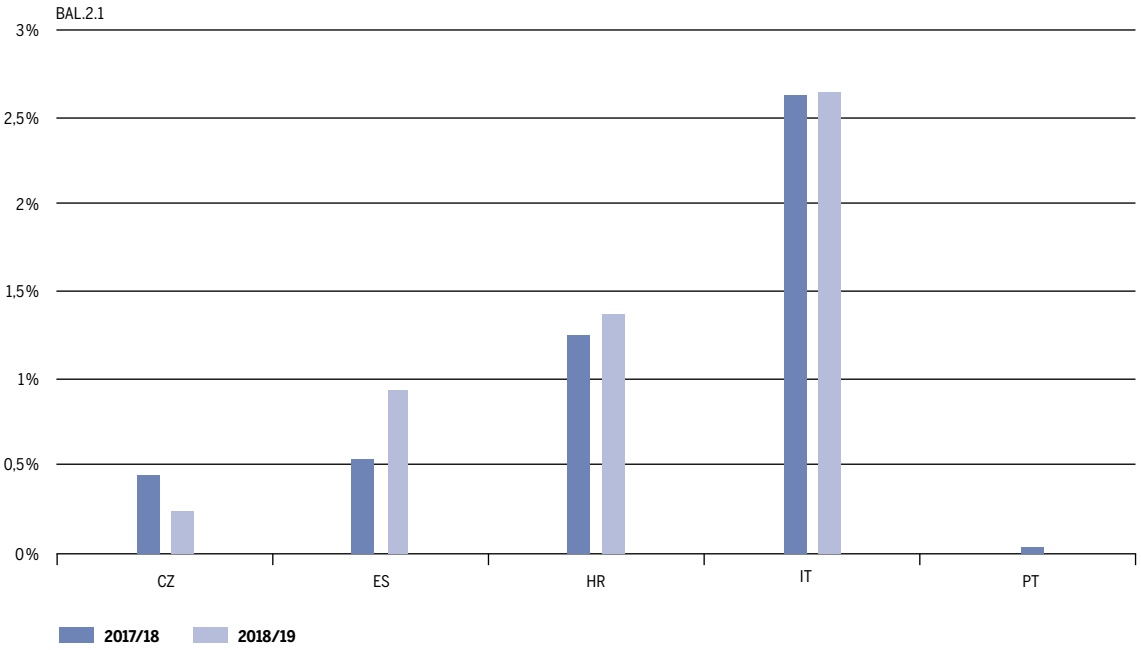
Regarding the German balancing zones, in both (DE-GP and NCG balancing zones) the indicator shows the highest values compared to the other balancing zones. One of the reasons for this is related to different gas quality existing in the two balancing zones. Network users are enabled to virtually convert gas between H-gas and L-gas areas. However, since the technical conversion is limited, NCG and DE-GP are required to balance this using commercial conversion via the corresponding purchase and sale of balancing gas in the respective gas qualities. Furthermore, Germany has implemented Variant 2 model for its non-daily offtake points, which is the reason for additional balancing actions. In the Variant 2 model the forecast in day D-1 is binding for the network users in day D to balance their portfolio. Any resulting differences within-day have to be balanced by the Market Area Managers.

France merged in November 2018 its two balancing zones, PEG Nord and Trading Region South (TRS), into one balancing zone: Trading Region France (TRF). From the analysis of the yearly trend of indicator BAL.2.1, it can be observed that after the balancing zone merger, the percentage of balancing actions over the market entry volume decreased compared to the values for each single balancing zone in GY 2017/18.

Looking at the results of the BAL.2.1 indicator for the countries belonging to Cluster 2016 (Figure 13), the percentage of TSOs balancing actions over the total entry market volume is quite modest (less than 3 %). Comparing the data for GY 2017/18 and for GY 2018/19, it can be observed that in 2 instances (CZ and PT) the value of indicator BAL.2.1 decreased significantly, while in the other cases there is a slight increase in the balancing volume traded by the TSO compared to the market entry volume. In the Spanish balancing zone, the increase in the value of BAL.2.1 during GY 2018/19 compared to GY 2017/18 is due to the volume that the TSO had to buy to cover the increase of users' imbalances compared to the previous GY. In Italy, the indicator BAL 2.1 is basically stable in both GYs.

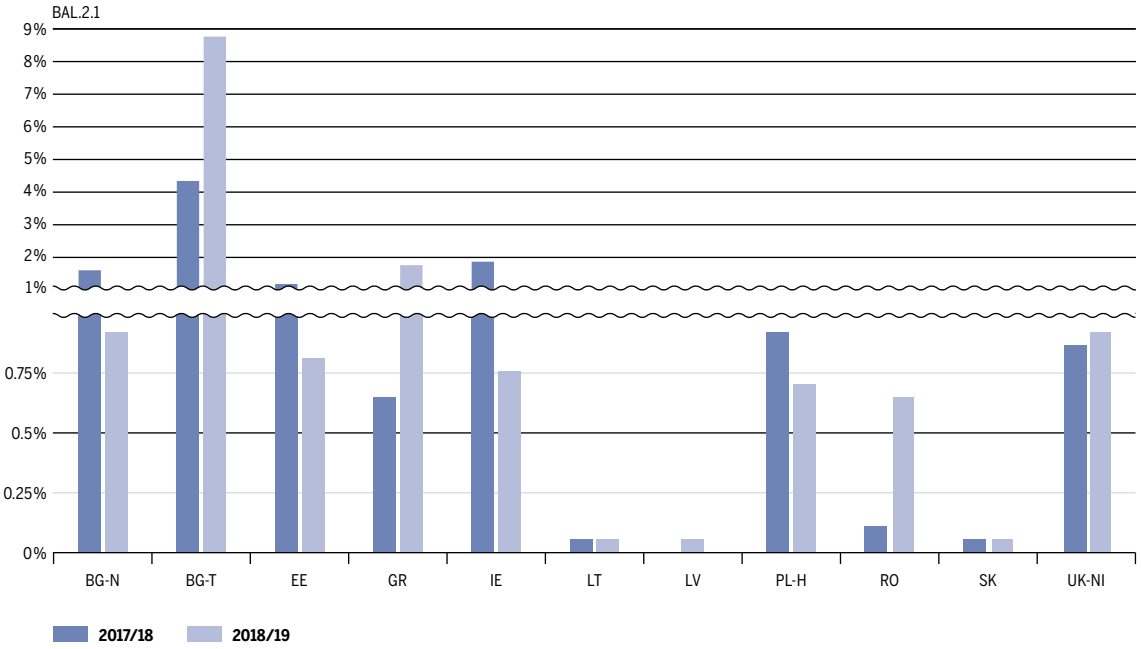
15 Results for Denmark consider balancing actions undertaken until 1 April 2019 (i.e. before the balancing zone merger with Sweden)

Figure 13. Indicator BAL 2.1 (%) Cluster 2016



The chart below (Figure 14) shows the results of BAL.2.1 in countries which applied interim measures in GY 2017/18 and GY 2018/19 (Cluster 2019).

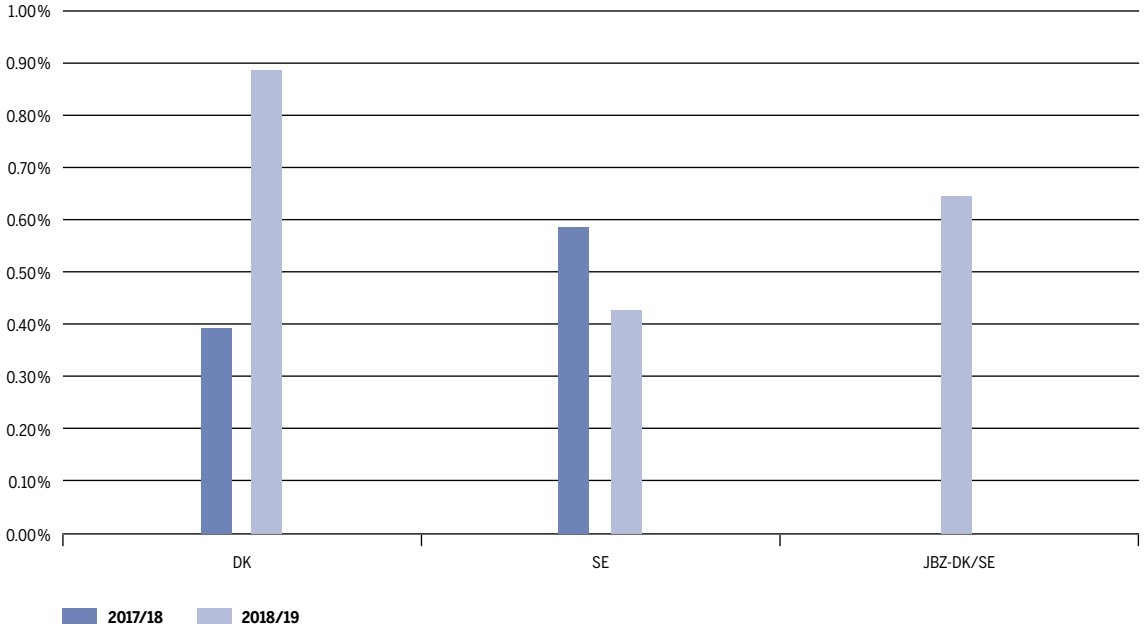
Figure 14. Indicator BAL 2.1 (%) Cluster 2019



In 4 cases (Bulgaria-N, Estonia, Ireland, Poland H-area) it can be observed a decrease in the TSO's actions between GY 2017/18 and GY 2018/19 can be observed. Poland terminated the use of interim measures by April 2019, therefore, this trend can be related to network users balancing their portfolios more efficiently and reducing the need for the TSO to undertake balancing actions. In Slovakia, the value for indicator BAL.2.1 is stable and close to 0 % in both GYs.

In Denmark and Sweden, after the balancing zone merger in April 2019, there has been a significant decrease of the TSO's balancing volume compared to the size of the market of the Joint Balancing Zone (see Figure 15).

Figure 15. Yearly indicator BAL.2.1 (%) Denmark/Sweden



2.2.3 DESCRIPTION OF INDICATOR BAL.2.2: TOTAL TSO BALANCING VOLUME AS % OF DOMESTIC CONSUMPTION

In order to better compare the balancing zones by removing the effect of the cross-border flows and storage facilities, the indicator BAL.2.2 is calculated by replacing the total entry volume with the domestic consumption. The domestic consumption means the quantity of gas allocated at all exit points to end-customers on the transmission network and towards DSO/city gate, excluding exits to storage and IP exits.

The BAL.2.2 indicator is calculated by dividing the **total quantity of gas traded by the TSO** for balancing purposes by the **domestic consumption.**

Indicator BAL.2.2 is combined with indicator BAL.2.1 in order to compare the TSO's balancing actions volume when divided by the exit volume (domestic consumption) and by the entry volume (market volume), respectively.

Indicator BAL.2.2	Definition
BAL.2.2: Total TSO balancing volume vs. Domestic consumption	The BAL.2.2 indicator is calculated by dividing the total quantity of gas traded by the TSO for balancing purposes (within a balancing zone and following a merit order) by the domestic consumption. If no balancing actions have been undertaken by the TSO for the gas day, the BAL.2.2 indicator is 0 %. **Formula:** Indicator BAL.2.2 (yearly) = Total quantity of gas traded by the TSO(s) for balancing purposes within a balancing zone / domestic volume [in %].
Unit	TSO balancing volume as % of domestic volume
Aim:	Decrease of % rate, minimized value.

Input data for Indicator BAL.2.2	Description
Total TSO balancing volume (equivalent to Input data for BAL.1)	Total TSO balancing volume is calculated as the sum of the gas volumes [buy + sell] of all balancing products which are conducted by the TSO following a merit order for balancing purposes. **Formula:** Total TSO balancing volume [in MWh] = ∑ volume of $STSP_n$ [in MWh] + ∑ volume of balancing services [in MWh] + ∑ volume of Interim Measures [in MWh] + ∑ volume of other balancing products [in MWh].
Domestic consumption	Domestic consumption [in MWh] = ∑ quantity allocated at all exit points to end-users on the transmission network [in MWh] + ∑ quantity allocated at all exit points towards DSO/city gate [in MWh]
Indicator BAL.2.2	Indicator BAL.2.2 (per runtime) = ∑ TSO balancing volume in MWh / ∑ domestic consumption volume in MWh / runtime [in %]

2.2.4 RESULTS AND ANALYSIS OF INDICATOR BAL.2.2 VS BAL.2.1

Results are shown in Annex VI for both GY 2017/18 and GY 2018/19 in order to compare the yearly evolution for the countries listed in each Cluster[16].

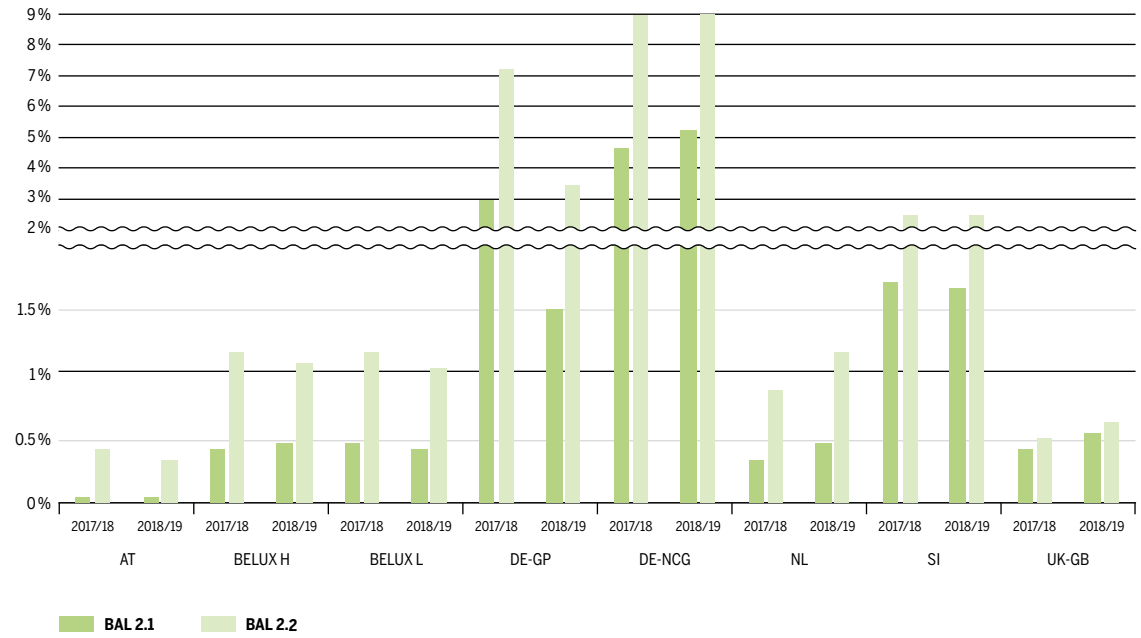
Comparing the results for indicators BAL.2.1 and BAL.2.2 it is possible to assess more precisely the magnitude of TSO actions.

Looking at the countries that implemented the BAL NC by 2015 (Figure 16) it can be observed that, even if in most of the balancing zones, the values for BAL.2.2 stay in a limited range (0 % – 2 %) in both GY 2017/18 and GY 2018/19, there is a visible spread between the two indicators in some cases.

In particular, in Germany for both balancing zones, the ratio of TSO's actions volume over the domestic consumption is relatively higher than the ratio of TSO's action volume over the market entry volume, due to the significant role of gas flows for cross-system network use. Additionally, the effect of managing the two gas qualities leads to numbers being higher than in other countries.

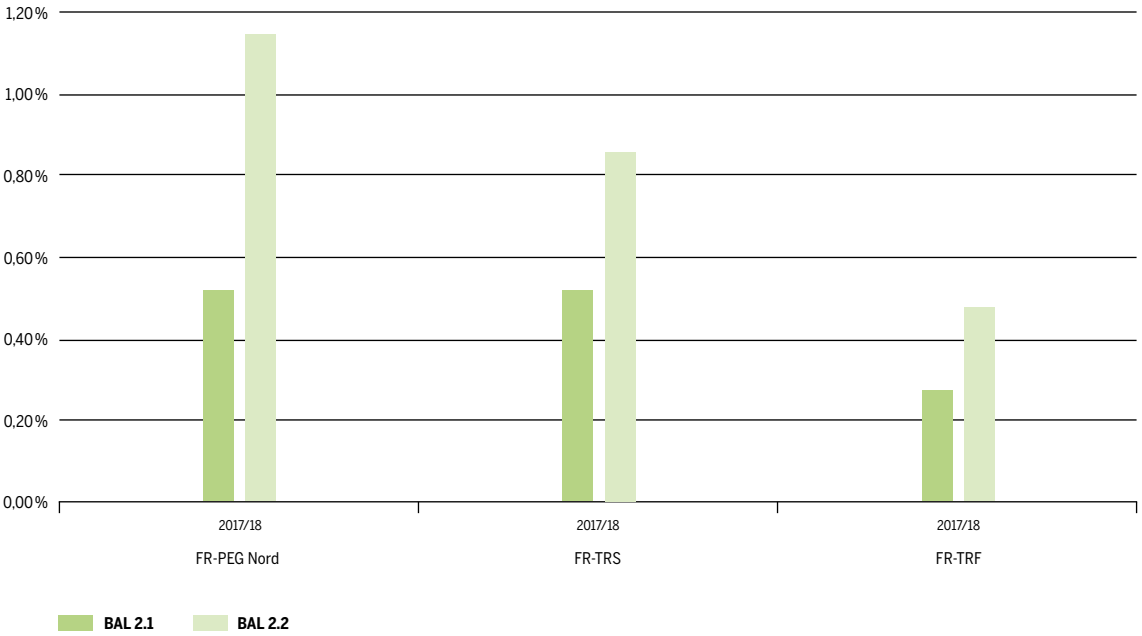
16 Results for Poland TGPS are excluded from the results since this balancing zone does not supply end-customers. Hungary is also excluded from the analysis since data for domestic consumption was not available.

Figure 16. Comparison indicators BAL2.1. vs BAL.2.2 (%), Cluster 2015



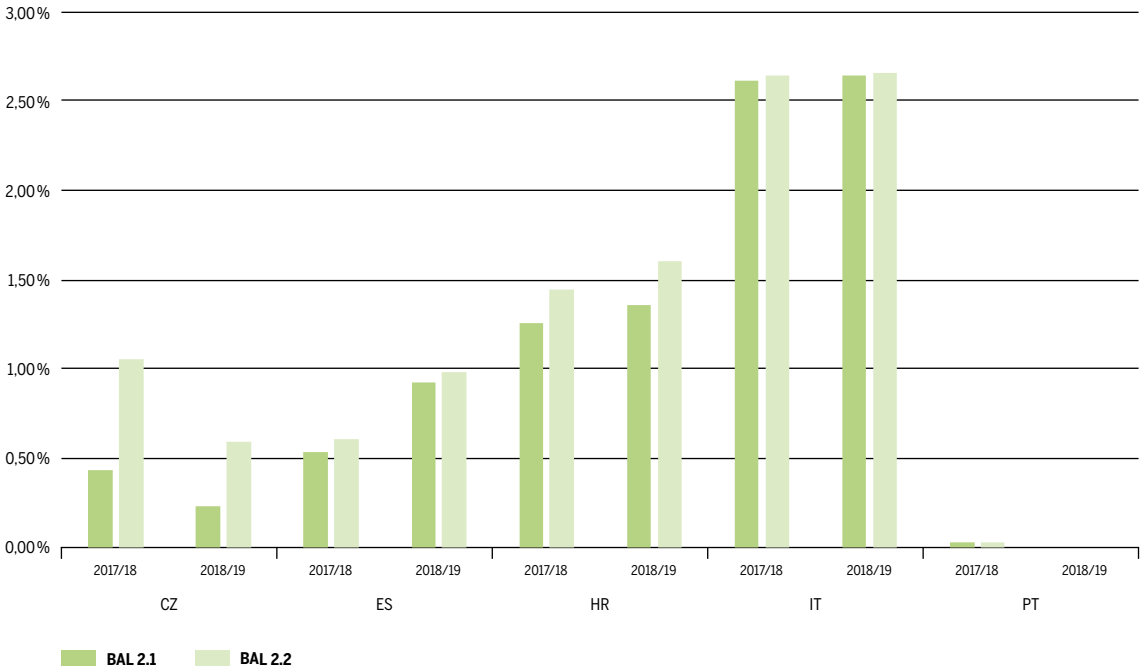
In France, by removing the effect of the cross-system volume, values for indicator BAL.2.2 show a higher percentage of TSO's actions volume when divided by the domestic volume (Figure 17) instead of the market volume (as per indicator BAL.2.1). Nevertheless, after the balancing zone merger (in GY 2018/19), both percentages for indicator BAL.2.1 and BAL.2.2 show a relative decrease if compared with the values calculated for each balancing zone in GY 2017/18.

Figure 17. Comparison yearly indicators BAL 2.1 vs BAL 2.2 (%) in France



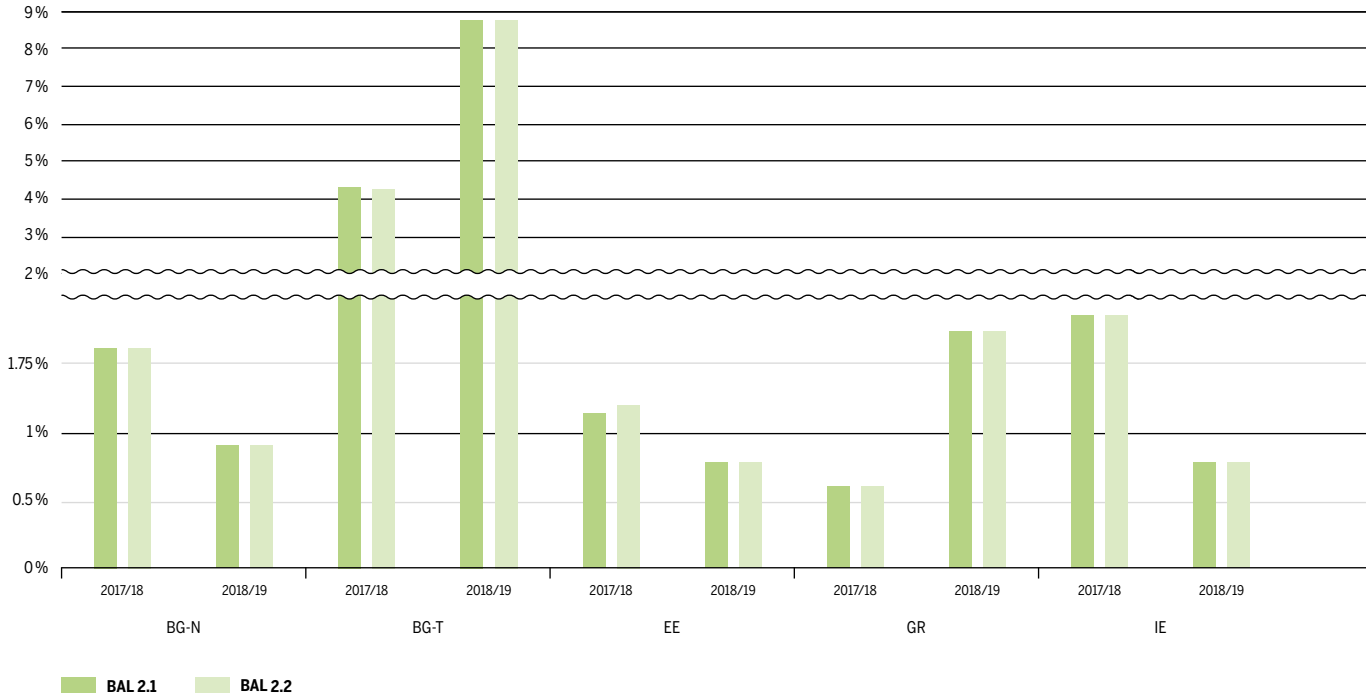
Among the countries included in Cluster 2016 (Figure 18), it can be observed a similar trend for Czech Republic, where the value of BAL.2.2 is higher than BAL.2.1 due to the removal of cross-system volume. In Italy, Spain and Portugal the range of BAL.2.1 and BAL.2.2 indicators is almost equal since most of the entry volume supplies the domestic consumption.

Figure 18. Comparison indicators BAL2.1 vs BAL.2.2 (%), Cluster 2016



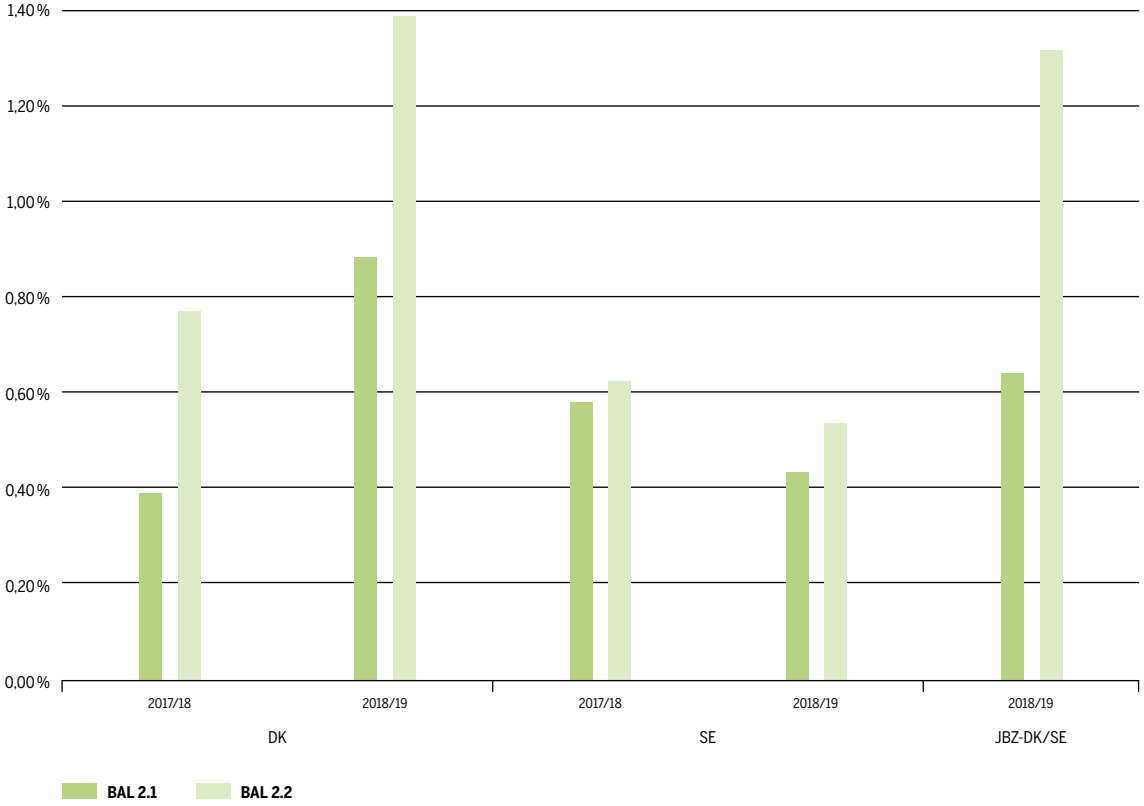
The graph below (Figure 19) shows the ratio of indicator BAL.2.1 vs BAL.2.2 for countries in Cluster 2019. Values for Latvia, Lithuania and Slovakia are close to 0 % due to the relatively low volume of TSO actions over both the market entry volume and the domestic consumption. Both values for BAL.2.1 and BAL.2.2 show a decrease in Estonia, Poland H-zone and UK-Northern Ireland from GY 2017/18 to GY 2018/19. In 5 countries (BG, EE, GR, IE and UK-NI) the market entry volume is equal to the domestic consumption, therefore there is no difference between the two indicators.

Figure 19. Comparison indicators BAL.2.1 vs BAL.2.2 (%), Cluster 2019 (two-page spread)

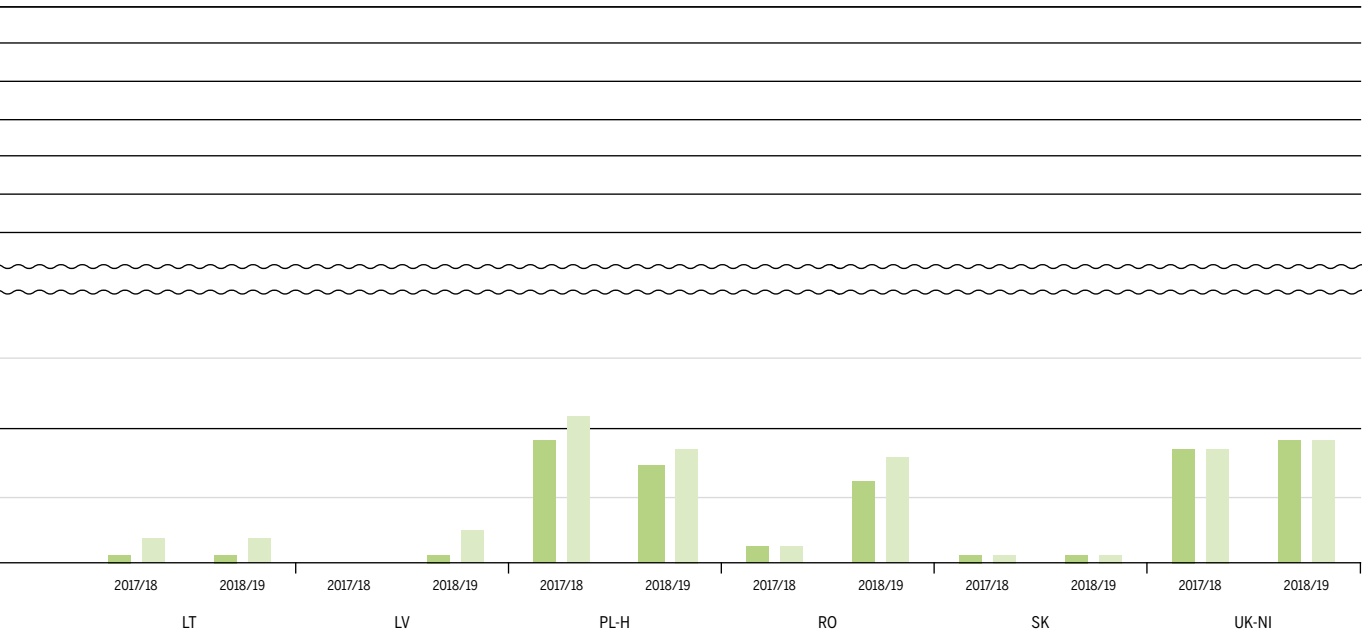


In the case of Sweden and Denmark, BAL.2.1 and BAL.2.2 for GY 2018/19 consider the volume of gas entering the Joint Balancing zone and the end-customers volume after the 1 April 2019 (Figure 20).

Figure 20. Comparison indicators BAL.2.1 vs BAL.2.2 (%) in Denmark/Sweden



Annex III contains information regarding the size of each balancing zones (total market entry volume and domestic end-consumption).



2.3 INDICATOR BAL.3 VS INDICATOR BAL.4: NET TSO BALANCING VOLUME AS % OF DOMESTIC CONSUMPTION VS. NET SHIPPER IMBALANCE VOLUME AS % OF DOMESTIC CONSUMPTION

2.3.1 DESCRIPTION OF INDICATOR BAL.3: NET TSO BALANCING VOLUME AS % OF DOMESTIC CONSUMPTION

ENTSOG proposes a third indicator related to the residual balancing role for the TSO. This indicator BAL.3 is calculated by dividing the **net quantity of gas traded by the TSO for balancing purposes** by the **total domestic consumption** (as per BAL.2.2 indicator). It gives an indication whether more gas is bought or sold by the TSO due to balancing purposes. For this indicator, **Domestic Consumption** is used as a proxy for the **Market Volume.**

Indicator BAL.3	Definition
BAL.3: Net TSO balancing volume vs. market volume (domestic volume)	The BAL.3 indicator is calculated by dividing the net quantity [SELL-BUY] of gas traded by the TSO for balancing purposes (within a balancing zone and following a merit order), by the domestic volume. If no balancing actions have been undertaken by the TSO for the gas day, the BAL.3 indicator is 0 % for that gas day. **Formula:** Indicator BAL.3 = Net quantity of gas traded by the TSO(s) for balancing purposes within a balancing zone / domestic consumption volume [in %].
Unit	TSO balancing volume as % of domestic volume
Aim:	Decrease of % rate, minimized value.

Input data for Indicator BAL3	Definition
Total SELL TSO balancing volume	The total SELL TSO's balancing volumes (excess gas into the network) is calculated as the sum of gas volumes of all balancing products which are sold to the market by the TSO for balancing purposes, following a merit order. **Formula:** Total SELL TSO balancing volume [in MWh] = ∑ SELL volume of STSP [in MWh] + ∑SELL volume of balancing services [in MWh] + ∑ SELL volume of Interim Measures [in MWh] + ∑ SELL volume of other balancing products [in MWh].
Total BUY TSO balancing volume	The total BUY TSO's balancing volumes (too little gas into the network) is calculated as the sum of gas volume of all balancing products which are bought from the market by the TSO for balancing purposes following a merit order. **Formula:** Total BUY TSO balancing volume [in MWh]= ∑ BUY volume of STSP [in MWh] + ∑ BUY volume of balancing services [in MWh] + ∑ BUY volume of Interim Measures [in MWh] + ∑ BUY volume of other balancing products [in MWh].
Net TSO balancing volume	Net TSO balancing volume is calculated as the difference of SELL and BUY gas volumes of all balancing products which are conducted by the TSO for balancing purposes following a merit order. Formula: Net TSO balancing volume [in MWh] = Total SELL TSO balancing volume [in MWh] – Total BUY TSO balancing volume [in MWh]
Domestic volume	Domestic consumption [in MWh] = ∑ quantity allocated at all exit points to end-users on the transmission network [in MWh] + ∑ quantity allocated at all exit points towards DSO/city gate [in MWh]
Indicator BAL.3	Indicator BAL.3 (yearly) = ∑ (net TSO balancing volume in MWh) / ∑ (market volume in MWh) [in %]

2.3.2 DESCRIPTION OF INDICATOR BAL.4: NET IMBALANCE VOLUME OF NETWORK USERS AS % OF DOMESTIC CONSUMPTION

This indicator aims at assessing whether the overall system is in balance (on a yearly basis) and whether the network users contribute sufficiently to keeping the overall system in balance. It is calculated by dividing the **total net imbalance volume of network users**[17] by the **domestic volume** (within a balancing zone).

Indicator BAL.4 is combined with indicator BAL.3 in order to compare relatively the net imbalance volume of network users and the counteracting net balancing volume of the TSO.

Indicator BAL.4	Definition
BAL.4: Net imbalance volume of network users vs. market volume (domestic volume)	The BAL.4 indicator is calculated by dividing the total net imbalance volume of network users [short and long] at the end of the gas day by the domestic consumption volume. In the cases when tolerances and Linepack Flexibility Service are applied, the net network users' imbalances also consider the tolerated imbalance volume (Short and Long). **Formula:** Indicator BAL.4 = ∑ Net imbalance volume of network users / domestic volume [in %].
Unit	Net imbalance volume of network users as % of domestic volume
Aim:	Net imbalance volume of network users = Net TSO balancing volume, converge to zero

Input data for Indicator BAL.4	Description
Net imbalance volume of network users	The Net imbalance volume of network users is calculated as the sum of the imbalance values of all network users that are long at the end of the gas day (positive value) and the sum of the imbalance values of all network users that are short at the end of the gas day (negative value). **Formula:** Net imbalance volume of network users [in MWh] = ∑ Imbalance volume [LONG] of network users [in MWh] + Imbalance volume [LONG] of network users within tolerances [in MWh] (or + Imbalance volume [LONG] of network users within LFS [in MWh]) + ∑ Imbalance volume [SHORT] of network users [in MWh] + Imbalance volume [SHORT] of network users within tolerances [in MWh] (or + Imbalance volume [SHORT] of network users within LFS [in MWh]).
Domestic volume	Domestic volume [in MWh] = ∑ quantity allocated at all exit points to end-users on the transmission network [in MWh] + ∑ quantity allocated at all exit points towards DSO/city gate [in MWh]
Indicator BAL.4	Indicator BAL.4 (yearly) = ∑ (Net imbalance volume of network users in MWh) / ∑ (domestic volume in MWh) [in %].

17 In Article 21 of the BAL NC, the imbalance quantities shall be calculated by the TSO as a daily imbalance quantity for each NU's portfolio for each gas day.

2.3.3 RESULTS AND ANALYSIS OF INDICATOR BAL.3 VS INDICATOR BAL.4

BAL.3 indicator provides an additional analysis of the residual balancing role for the TSO, comparing the net TSO balancing volume with the domestic consumption volume. This indicator is compared to the BAL.4 indicator which assesses the percentage of net network users' imbalance volume over the domestic consumption volume. Both indicators should be minimized and should have a limited range.

If BAL.4 is positive, it means that the market is LONG, so there is too much gas at the end of the gas day. In this case the TSO needs to take actions, e.g. by selling gas in order to keep the system balanced (positive BAL.3). If BAL.4 is negative, it means that the market is SHORT, so there is not enough gas at the end of the gas day. In this case the TSO needs to take actions, e.g. by buying gas in order to keep the system balanced (negative BAL.3).

The tables in Annex VIII show the results of indicators BAL.3 and BAL.4 for both GY 2017/18 and GY 2018/19 in order to compare the yearly evolution for the balancing zones listed in each Cluster.

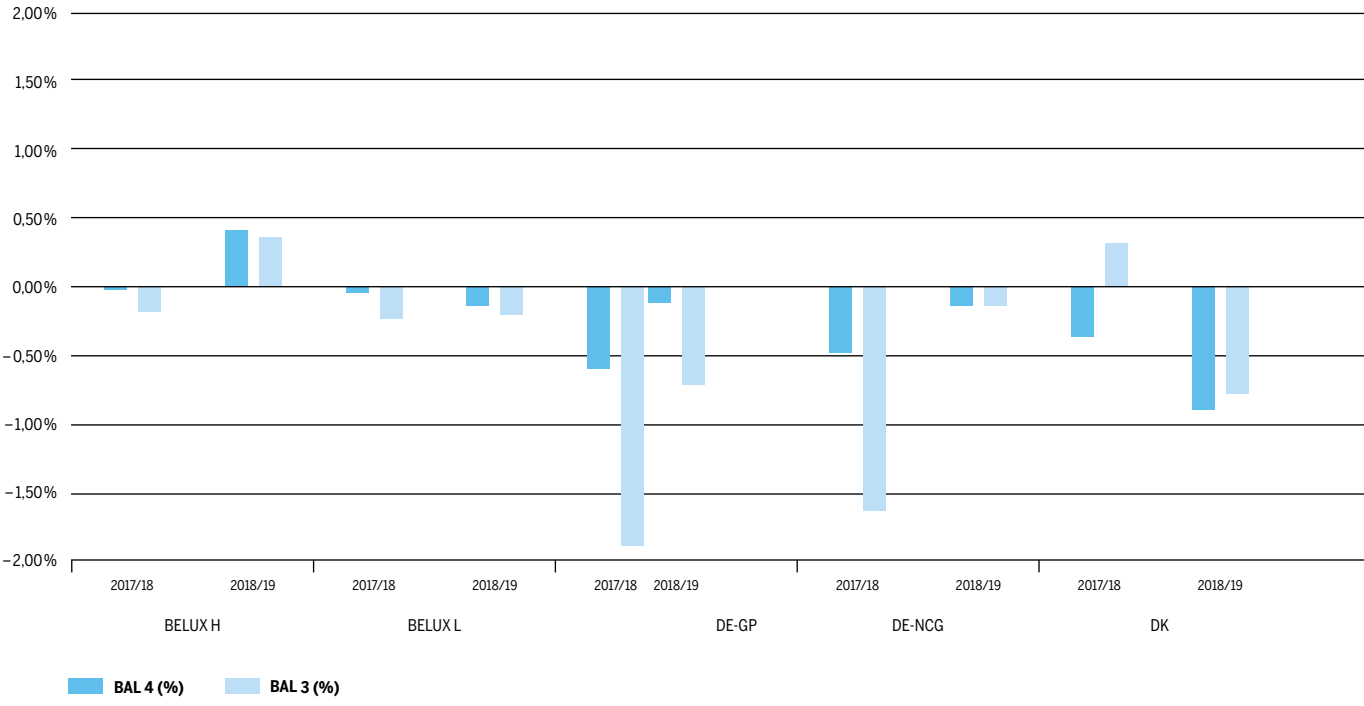
Balancing zones in the Cluster 2015 (Figure 21) show relatively low values for both indicators, which means that both TSOs' actions and Network users' imbalance volume is in a limited range (< 2 %).

Austria has been excluded from the analysis for BAL.3 and BAL.4 due to the peculiarity of the Austrian market. In the Austrian balancing zone (Market Area East), the Market Area Manager (MAM) is responsible for balancing the system. The MAM is allowed to buy/sell volumes in the name and for the account 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 within balance groups, so all MAM's balancing actions are triggered by BGR imbalances. Therefore, if the basis for the calculation of the indicators is a netting of long and short volumes, the results for Austria are not representative.

In the BeLux H zone, values for both BAL.3 and BAL.4 show a slight increase year-on-year (YoY). The network users' imbalances are considered at the end-of-day situation, while the balancing regime with Within Day Obligations (WDO) pushes the TSO to buy also within-day (mostly buy actions). Moreover, during the period February – March 2018, the cold spell pushed the Belgian TSO to buy large quantities during the day, a fact that can explain the slight increase in the TSO's actions. Conversely, in the BeLux L zone, a slight decrease of both indicators is observed YoY.

In Germany, the TSO's balancing actions are higher if compared to the network users' imbalances. However, values for both indicators BAL.3 and BAL.4 show a consistent decrease YoY.

Figure 21. Cluster 2015, indicator BAL 4 vs BAL 3 (%) (two-page spread)



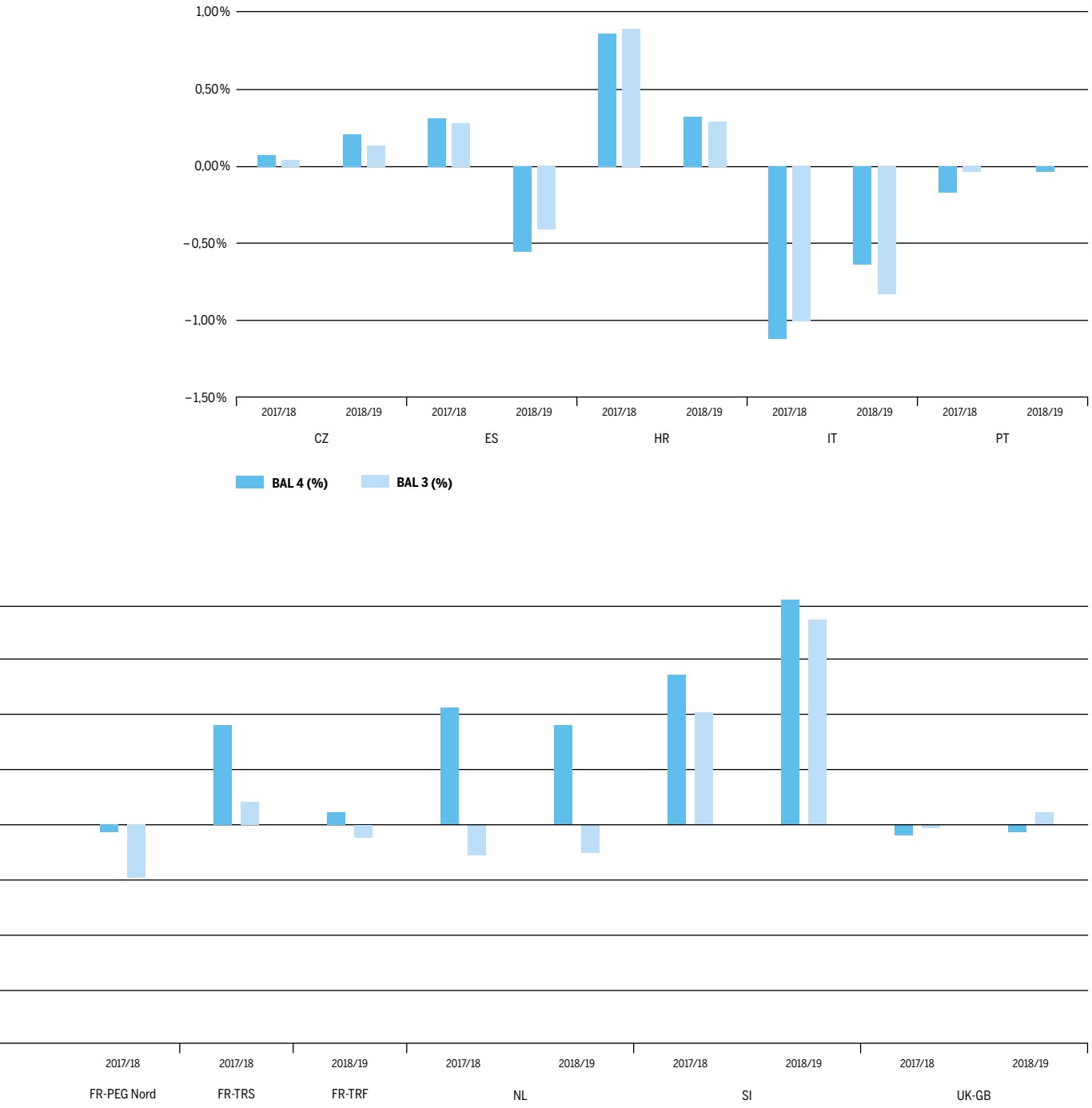
In France, after the balancing zone merger, the values for both indicators decreased. The comparison of indicators BAL.3 and BAL.4 shows that the net network users' imbalances are relatively small (almost 0 %) compared to the net TSO's actions (mostly buy actions).

In Slovenia, the trend of BAL.3 and BAL.4 is aligned but increasing on a YoY basis. This might be related to the relatively small size of the market where even a small imbalance from network users can have a relatively big impact on BAL.3 and BAL.4.

Overall, the trend of indicators BAL.3 and BAL.4 is aligned. In five balancing zones (BELUX-L, DE-GP, DE-NCG, FR-PEG Nord and UK-GB), the prevailing direction of the market is short in both Gas Years, while in five (BELUX-H, FR-TSR, FR-TRF, NL and SI) balancing zones, the prevailing direction is long.

Figure 22 below presents the results for balancing zones in the Cluster 2016.

Figure 22. Cluster 2016, indicator BAL 4 vs BAL 3 (%)



CZ and PT have the smallest net imbalance volume. In Spain, it can be observed that the values for indicators BAL 3 and BAL 4 are aligned. However, in GY 2017/18 the network was mostly oversupplied (more than 60 % of the time), therefore indicator BAL.3 shows that the TSO was mostly selling gas to the market, while in GY 2018/19 the market was short (therefore the TSO was mostly buying gas from the market). Italy has relatively higher imbalances compared to the other balancing zones of the Cluster 2016, although values are aligned with Cluster 2015. In Croatia, values for both indicators decrease significantly in GY 2018/19.

Figures 23 and 24 below show balancing zones under the Interim Measures in GY 2017/18 (IE, LT, LV, PL-H, PL-L, RO) and/or GY 2018/19 (BG-N, BG-T, GR, IE, SK, UK-NI).

Figure 23. Cluster 2019, indicator BAL 4 vs BAL 3 (%), countries that terminated the use of interim measures + Estonia

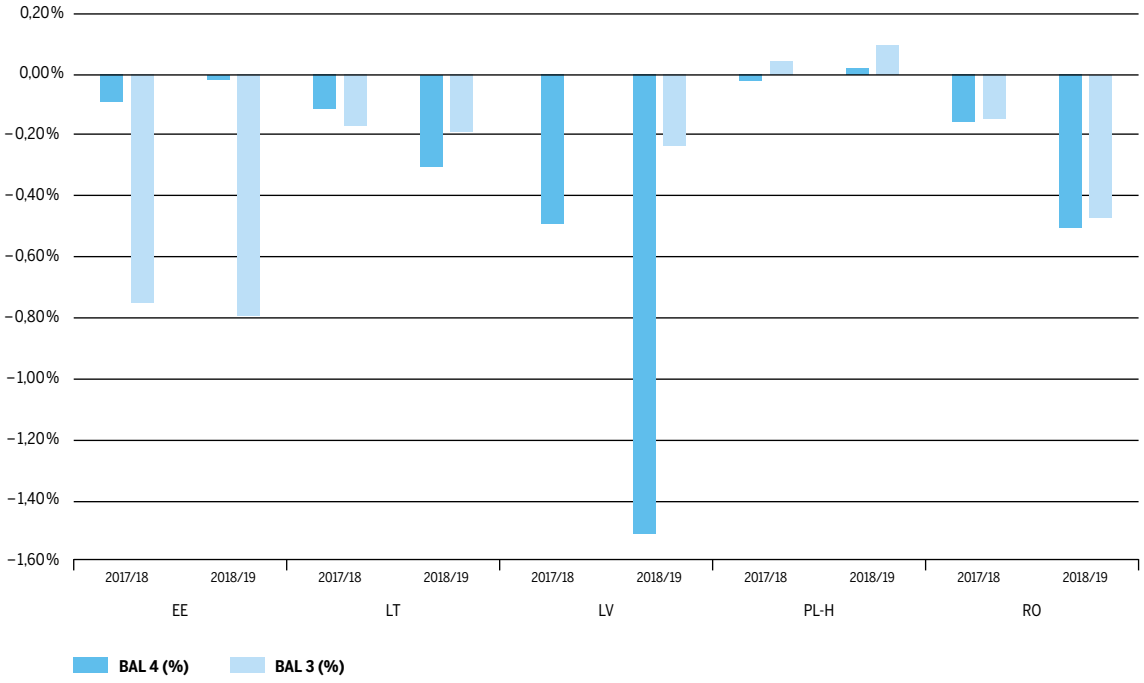
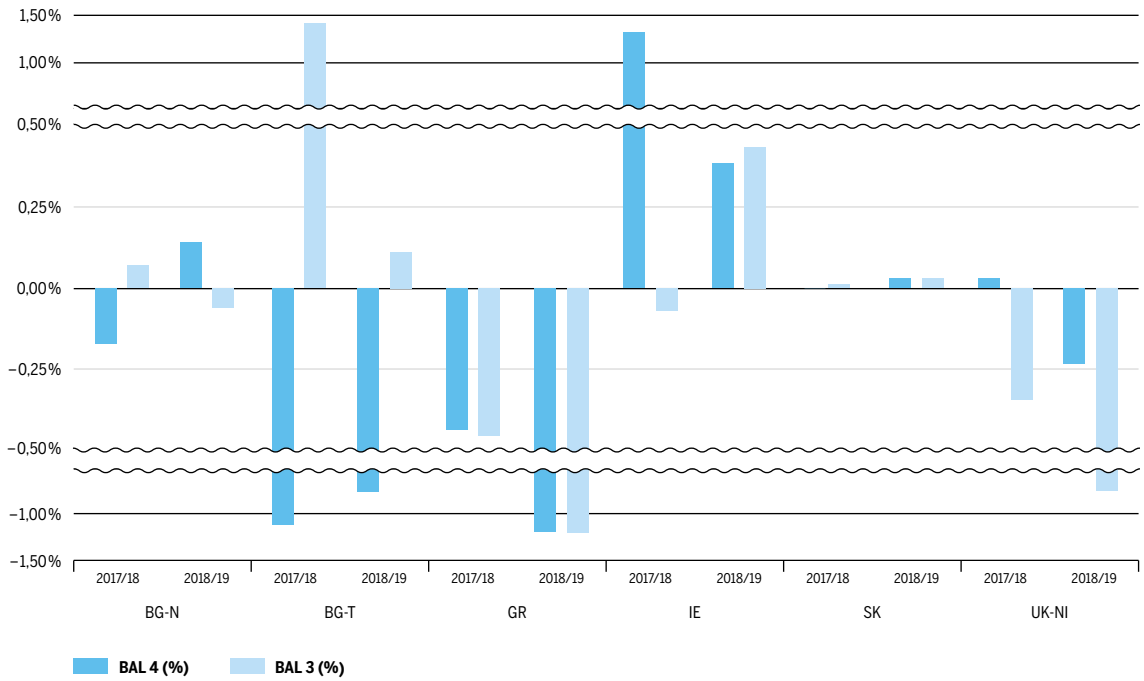


Figure 24. Cluster 2019, indicator BAL 4 vs BAL 3 (%), countries under interim measures



Among the countries that terminated the use of interim measures by April 2019, in Latvia, the percentage value of imbalances over the total market volume (in terms of domestic end-customers consumption) increased consistently in GY 2018/19.

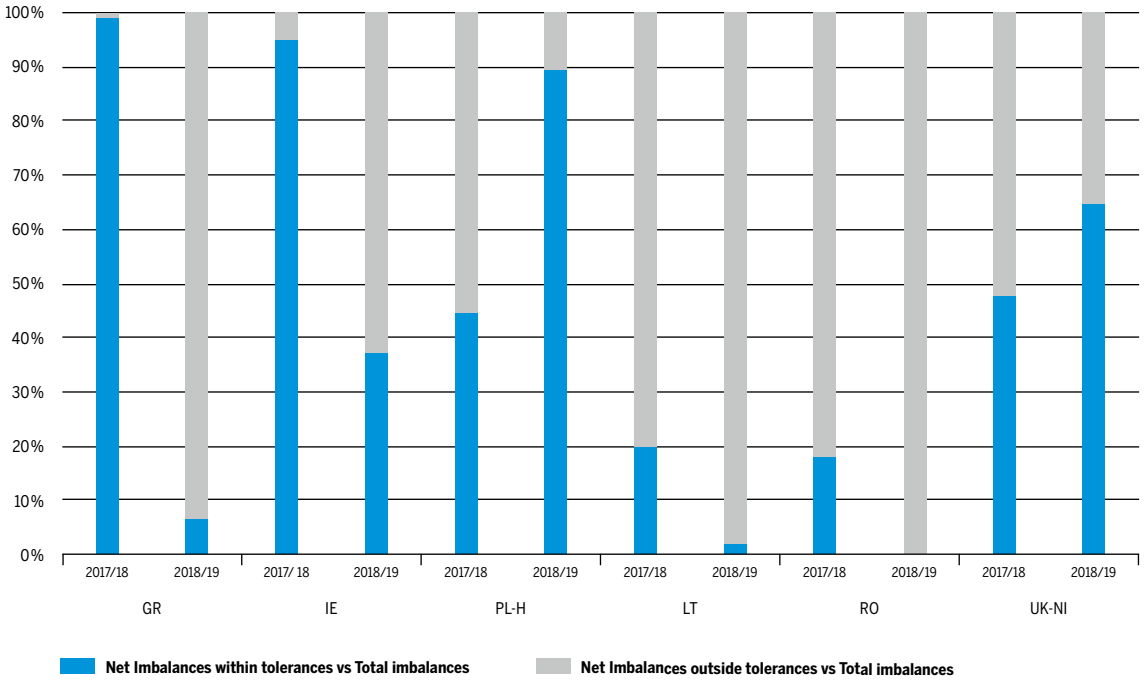
In the countries that are currently under interim measures, for GY 2018/19, Bulgaria (Transit zone), Greece and UK-NI have the highest range of net network users' imbalances and TSO's actions. In Greece and Northern Ireland, values for BAL.3 and BAL.4 indicators are significantly higher compared to the previous GY (2017/18). In Greece, balancing actions are most often used to correct system short positions due to the profile of the domestic demand. A significant portion of the domestic demand (~ 65 %) comes from gas-fired power plants, and such network users are more prone to a short position due to the structure of electricity market.

In Northern Ireland, the prevailing direction of the network users' imbalances is long in GY 2017/18, even though the ratio between imbalance volume and domestic consumption is almost close to 0 %, while in GY 2018/19 the prevailing direction is short and the net imbalances increase. Net TSOs' actions also show an increase in the two GYs. This is due to changes introduced in October 2018 to the Single Electricity Market. Power generation accounts for 57 % of Northern Ireland's gas demand. As Northern Ireland operates a daily balancing regime, this can lead to network users submitting re-nominations later in the gas day. This has become a more frequent scenario with generators waiting for certainty of their electricity dispatches. This has led to the TSOs stepping in more often to balance the network.

Among the countries in Cluster 2019, 7 countries (BG-N/T zones, GR, IE, LT, PL-H, RO, UK-NI) applied tolerances as an interim measure in GY 2017/18. Out of these 7 countries, Greece terminated the use of tolerances as of 1 January 2019, while Poland, Lithuania and Romania terminated the use of tolerances as of April 2019. Ireland reduced the level of tolerances in April 2019 but kept their application for Daily Metered offtakes. Tolerances reduce the network users' financial exposure to the marginal buy/sell price within a certain limit of daily imbalances, as set by the TSO. Indicator BAL.4 considers the overall net shippers' imbalances (within and outside the tolerated volume).

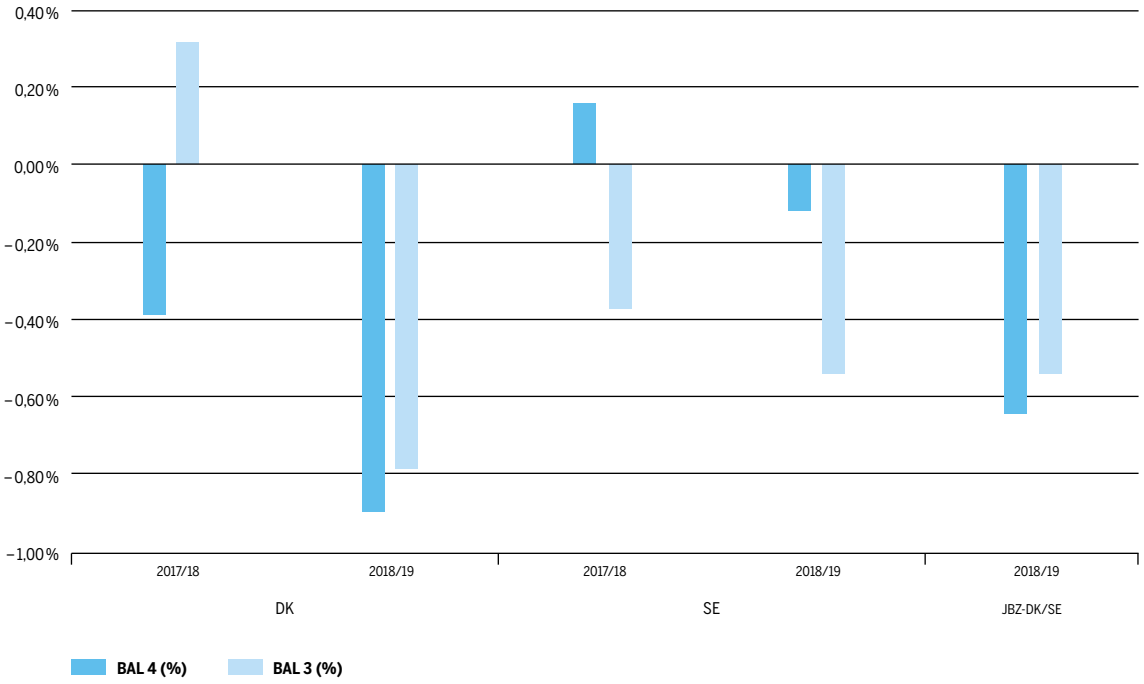
Figure 25 below shows the percentage of net network users' imbalances beyond tolerated values compared to the net imbalances within the tolerance level applied.

Figure 25. Net network users' imbalances within and beyond tolerances vs net total imbalances



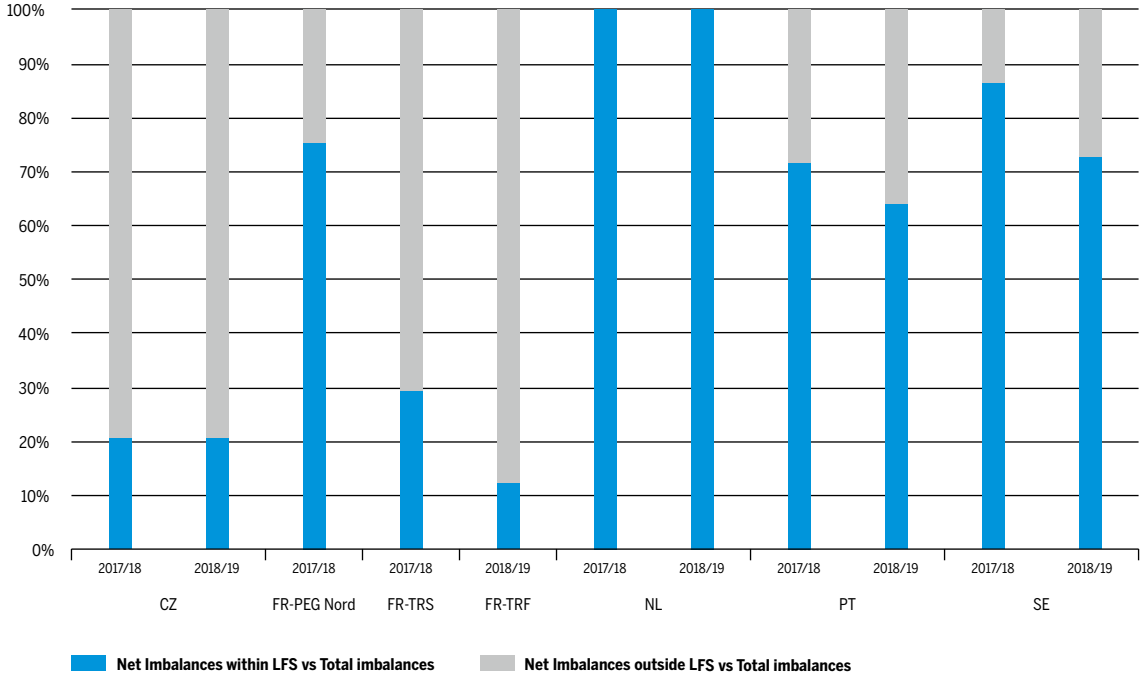
In both Denmark and Sweden, the range of indicators BAL.3 and BAL.4 is quite limited in both gas years and the net TSO actions have been reduced after the balancing zone merger in GY 2018/19 if compared to each balancing zone (Figure 26).

Figure 26. Comparison of indicators BAL.3 and BAL.4 (%) for Denmark and Sweden



In 5 countries (CZ, FR, NL, PT and SE[18]) the Linepack Flexibility Service (LFS) is offered by the TSO to manage some of the imbalances occurring at the end of the gas day. For instance, in the Netherlands, the network users' imbalances are covered totally with the LFS. In the other countries the LFS is available but the gas available in the linepack is not enough to cover the daily imbalances. In Sweden, the LFS was used until the balancing zone merger occurred. Figure 27 below shows the percentage of net network users' imbalances beyond the LFS compared to the net imbalances covered with the LFS.

Figure 27. Net network users' imbalances within and beyond LFS vs net total imbalances



18 Until 01/04/2019.

2.4 INDICATOR BAL.5: AVERAGE NETWORK USERS' COST OF BEING BALANCED BY THE TSO

2.4.1 DESCRIPTION OF THE INDICATOR

In the Second BAL NC Effect Monitoring Report 2017 ENTSOG introduced indicator BAL.5 to assess the average marginal cost borne by the network users for being imbalanced. In this Third Effect Monitoring Report the same indicator is proposed with some minor adjustments in the calculation methodology.

In the case of **negative imbalances** (Short Network Users) applying at the end of the gas day, the **indicator BAL.5 is now derived by comparing the average Daily Buy price applied by the TSO with the average daily Weighted Average Price (WAP).** In the case of **positive imbalances** (Long Network Users) applying at the end of the gas day, the indicator **BAL.5 is now derived by comparing the average Daily Sell price applied by the TSO with the average daily Weighted Average Price (WAP).**

The aim is to indicate the additional cost (relative to the average daily WAP) for network users of being balanced by the TSO.

In the Second BAL NC Effect Monitoring Report, it was compared the Marginal Buy/Sell Price to the Weighted Average Price plus the small adjustment. In this Report it has been consider the amended methodology outlined above, and described in detail below, to provide a better reflection of the additional cost to network users associated with relying on the TSO to correct system imbalances.

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 (daily WAP) applied to the imbalance quantities within the tolerance and the price applied to the imbalance quantities in excess of the tolerance. In circumstances where a Linepack Flexibility Service (LFS) is offered by the TSO[19], it has been assumed that the Daily Sell price and Daily Buy price is equal to the Daily Marginal Buy Price and the Daily Marginal Sell Price respectively. This is because not all network users use the available LFS and their imbalances are therefore subject to the Daily Marginal Buy/Sell Price.

Indicator BAL.5	Definition
BAL.5: Average shipper's cost of being balanced by a TSO	The BAL.5 indicator is calculated as follows: **Formula:** Indicator BAL.5 (Long network users) = [(Average Daily Sell price/average daily WAP)-1] *100 Indicator BAL.5 (Short network users) = [(Average Daily Buy price/average daily WAP)-1] *100
Unit	% (provided per gas year)
Aim:	To indicate the additional cost (relative to the average daily WAP) for network users of being balanced by the TSO.

19 A LFS is offered in CZ, FR, NL and PT (SE offered a LFS until the merger with Denmark in April 2019).

Input data for Indicator BAL.5	Description
Average Daily Sell price (LONG network users)	The Average Daily Sell price = (∑Daily Sell price)/number of gas days
Average Daily Buy price (SHORT network users)	The Average Daily Buy price = (∑Daily Buy price)/number of gas days
Daily Sell price	In cases where no tolerances are applied, the Daily Sell price = Daily Marginal SELL Price. In cases where a tolerance applies, the Daily Sell price = [(the imbalance within the tolerance * the daily WAP) + (imbalance in excess of the tolerance * Daily Marginal SELL Price)] / (the total imbalance)
Daily Buy price	In cases where no tolerances are applied, the Daily Buy price = Daily Marginal BUY Price. In cases where a tolerance applies, the Daily Buy price = [(the imbalance within the tolerance * the daily WAP) + (the imbalance in excess of the tolerance * Daily Marginal BUY Price)]/(the total imbalance)
Daily Marginal Buy Price and Daily Marginal Sell Price	The Daily Marginal BUY Price and the Daily Marginal SELL Price are determined in accordance with Articles 22.1 and 22.2 of the BAL NC[20]
Average daily Weighted Average Price (WAP)	The average daily WAP = (∑ the daily WAP) / number of gas days
Daily Weighted Average Price (WAP)	The daily Weighted Average Price (Euro/MWh) is defined in Article 22.3 of the BAL NC as the energy weighted price of trades in title products carried out at the virtual trading point in respect of a gas day.

2.4.2 RESULTS AND ANALYSIS

The calculation of indicator BAL.5 has been performed only for the countries where the data were available[21]. Countries that applied interim imbalance charge in GY 2017/18 (IE, BG-N, BG-T, GR, LV, PL-L, PL-TGPS, RO, SK and UK-NI) and GY 2018/19[22] (BG-N, BG-T, GR, PL-L, PL-TGPS, SK and UK-NI) are excluded from the calculation.

Considering the specificities existing in the balancing regimes of the analysed countries, the presentation of the results 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.

Results are presented in the figure below (Figure 28) for GY 2017/18 for the analysed balancing zones.

In Germany, Portugal and Slovenia, the deviation of both Average Daily Buy/Sell Prices from the average daily WAP, are high relatively to the other zones (12 % (Buy), – 5 % (Sell), 13 % (Buy), – 7 % (Sell) and 20 % (Buy), – 20 % (Sell), respectively).

In Germany, one of the reasons for this is related to the use of Variant 2 model for its non-daily offtake points. In the Variant 2 model the forecast in D-1 is binding for the network users in D to balance their portfolio. Any resulting differences within-day have to be balanced by the Market Area Managers. Moreover, the mainly virtual conversion system in Germany could lead to balancing actions which are independent from the network users' imbalances. If necessary, the Market Area Managers are realising the virtual converted flows by balancing actions. Both the balancing actions for conversion purposes and those derived from portfolio imbalances are determining the daily marginal buy and sell price. Against this background, the indicator BAL.5 results cannot deliver an unambiguous picture of the degree of incentives for network users in Germany.

In Slovenia, following the implementation of the BAL NC requirements in 2015, the balancing regime improved significantly and lowered the costs of balancing actions of the TSO. Currently, the daily BUY/SELL prices on balancing market are profiled according to current valid national legislation for gas TSO where is observed a lack of more proactive involvement of network users. Nevertheless, new additions to the national network code for TSO are in the final stage of implementation and it is expected that with their accomplishment, the possibilities for the network users to balance their portfolio will increase.

20 Daily Marginal Buy Price (Euro/MWh) is the higher of:

I. The highest price of any purchases of title products in which the transmission system operator is involved in respect of the gas day; or
II. The weighted average price of gas in respect of that day, plus a small adjustment.

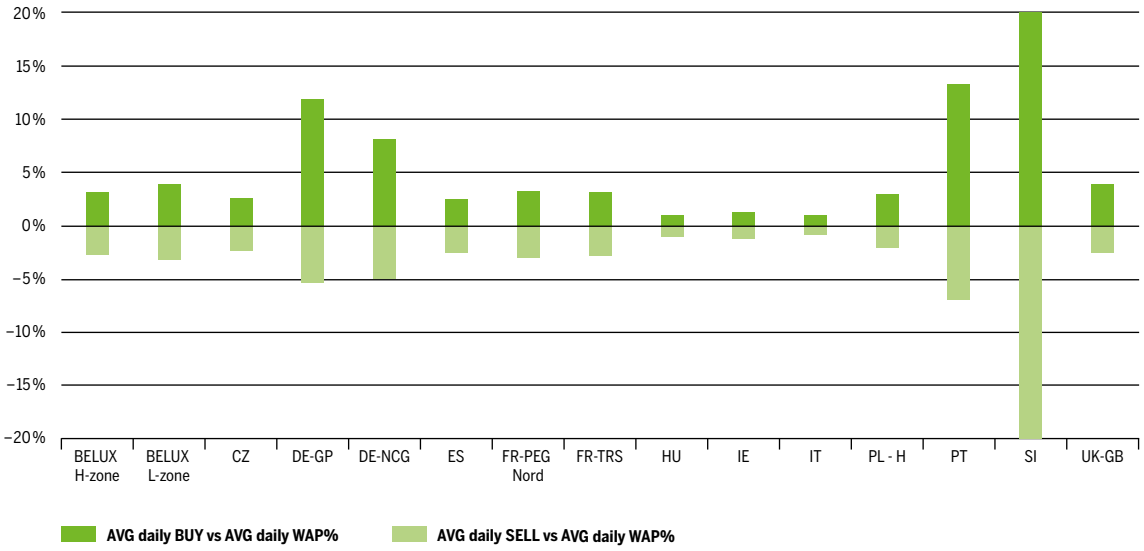
Daily Marginal Sell Price (Euro/MWh) is the lower of:
I. The lowest price of any sales of title products in which the transmission system operator is involved in respect of the gas day; or
II. The weighted average price of gas in respect of that day, minus a small adjustment.

21 For AT and NL the provisions of Article 22 of the BAL NC are not applicable. Data regarding applied prices were not available for EE, HR, LT, LV, DK and SE.

22 Ireland has applied interim imbalance charge as interim measure according to art. 49 until 1 April 2019.

In Poland-H zone the application of tolerances to reduce the financial exposure of network users results in a minimum deviation of both the Average Daily Buy/Sell Prices from the average daily WAP (3 % (Buy), – 2 % (Sell)).

Figure 28. Indicator BAL.5 GY 2017/18

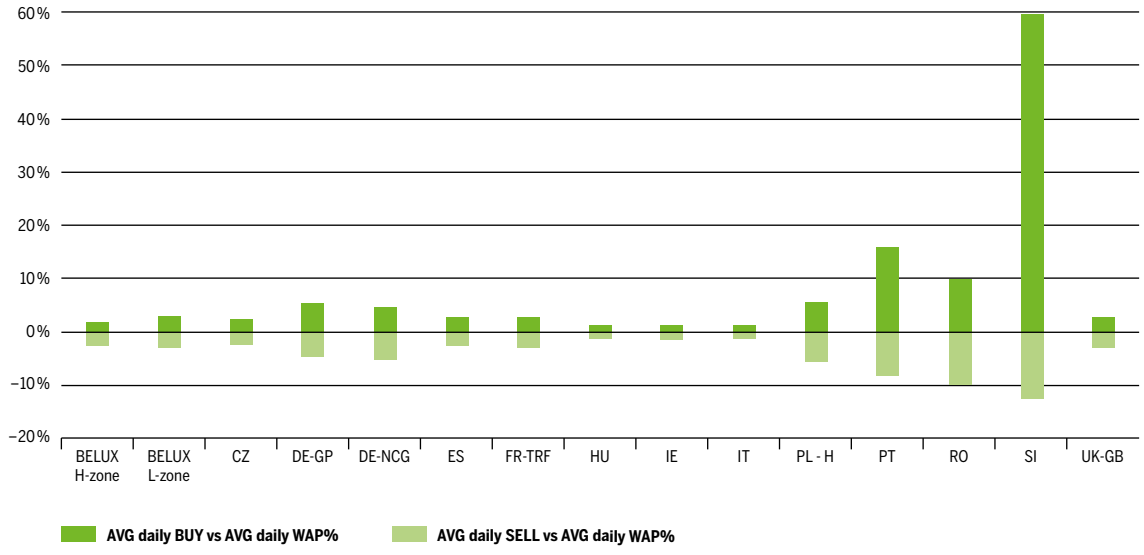


Results for GY 2018/19 show that in most of the balancing zones presented, the ratio between Average Daily Buy/Sell Price and average daily WAP varies between 6 % (Average Daily Buy price) and – 6 % (Average Daily Sell price). However, there are a few cases where the deviation of both Average Daily Buy/Sell Prices from the average daily WAP is relatively higher than in the other balancing zones, namely Romania, Portugal and Slovenia.

In Slovenia, the deviation of the Average Daily Buy Price from the average daily WAP is higher than GY 2017/18 and also higher than the deviation of the Average Daily Sell price from the average daily WAP (60 % (Buy) and – 12 % (Sell)). Together with Slovenia, also in Portugal and Romania, the deviation of both the Average Daily average Buy/Sell Prices from the average daily WAP, are moderately high compared to the other balancing zones (16 % (Buy), – 8 % (Sell) and 10 % (Buy), – 10 % (Sell), respectively).

Results for France consider the Average Daily Buy/Sell Prices after 1 November 2018, i.e. after the balancing zone merger.

Figure 29. BAL.5 GY 2018/19



3 CONCLUSIONS

1. The Effect Monitoring Report shows an advanced stage of development of the short-term balancing market in most of the European Member States.
2. **Indicator BAL.1:** In 15 countries (AT, BE, CZ, DE, DK[23], FR, ES, HR, HU, IE, IT, PL, SI, SK, UK-GB) TSOs rely mainly or exclusively on title products for their balancing actions. The results of the indicator show a more frequent use of WD title products compared to other type of STSPs when compared to the previous Effect Monitoring Report. The use of balancing services has been progressively reduced. In GY 2016/17, TSOs in 10 countries (BG, EE, GR, IE, LV, LT, PT, RO, SE, UK-NI) relied almost exclusively on balancing services to undertake balancing actions, whereas in GY 2017/18 only the following four countries (EE, GR, LT, PT) relied mostly on balancing services. In GY 2018/19 only the following four countries (EE, GR, LV, LT) used mostly balancing services to undertake balancing actions. Following the termination of interim measures, the use of STSPs has become the preferred tool used by the TSOs to perform their residual balancing role.
3. Analysing the prices of TSO BUY and SELL actions, in most of the countries the TSO BUY prices for STSPs trades is generally higher than the SELL price. Overall, it can be observed a price reduction of TSO actions between GY 2017/18 and GY 2018/19.
4. **Indicator BAL.2.1/BAL.2.2:** Whilst the market size (both in terms of entry and exit volumes) remained almost unchanged in the analysed countries, in 15 countries/balancing zones (AT, BELUX-L, BG-N, CZ, DE-GP, DK-JBZ, EE, FR, HU, NL, PL, PT, SI, SK, UK-GB) the volume of TSO actions in GY 2018/19 decreased if compared to the TSO volumes traded in GY 2017/18, while in 11 countries/balancing zones (BELUX-H, BG-T, DE-NCG, ES, GR, IE, IT, LT, LV, RO, UK-NI) the total volume of balancing actions in GY 2018/19 increased compared to the previous GY. However, the total volume of balancing actions undertaken by the TSO remains marginal if compared with the market volume or the domestic consumption. Moreover, independently from the categorisation of countries in each Cluster, it can be observed that the number of days that the TSOs undertook balancing actions decreased in most of the cases from GY 2017/18 to GY 2018/19.
5. **Indicator BAL.3 vs BAL.4:** A correlation between the net network users' imbalances and the TSO's balancing actions is visible in most of the cases. In most of the countries (except Austria and the Netherlands), imbalances occur each gas day, whilst the TSOs' balancing action volume is relatively lower than the network users' imbalances volume.
6. **Indicator BAL.5:** The calculation of indicator BAL.5 has been performed only for the countries where the data were available. Countries that applied interim imbalance charge in GY 2017/18 (IE, BG-N, BG-T, GR, LV, PL-L, PL-TGPS, RO, SK) and GY 2018/19[24] (BG-N, BG-T, GR, PL-L, PL-TGPS, SK) are excluded from the calculation.

   Results of the calculation for GY 2017/18 show that in most of the balancing zones presented, the ratio between Average Daily Buy/Sell Price and average daily WAP varies between 5 % (Average Daily Buy price) and – 5 % (Average Daily Sell price). Few cases where the deviation of both Average Daily Buy/Sell Prices from the average daily WAP is relatively higher than the other balancing zones can be observed in Germany, Portugal and Slovenia. This is due to the reasons described in detail in the analysis of the indicator BAL.5.

   Results for GY 2018/19 show that in most of the balancing zones presented, the ratio between Average Daily Buy/Sell Price and average daily WAP varies between 6 % (Average Daily Buy price) and – 6 % (Average Daily Sell price). However, there are a few cases where the deviation of both Average Daily Buy/Sell Prices from the average daily WAP is relatively higher than the other balancing zones, namely Romania, Portugal and Slovenia.

23 Including results for the Joint Balancing Zone DK/SE

24 Ireland has applied interim imbalance charge as interim measure according to art. 49 until 1 April 2019.

ANNEXES

ANNEX I: LIST OF ABBREVIATIONS

ACER	Agency for the Cooperation of Energy Regulators
BAL NC	Balancing Network Code
EC	European Commission
ENTSOG	European Network of Transmission System Operators for Gas
EU	European Union
GY	Gas Year
LFS	Linepack Flexibility Service
MAM	Market Area Manager
NRA	National Regulatory Authority
STSP(s)	Short-Term Standardised Product(s)
TSO	Transmission System Operator
VTP	Virtual Trading Point
WDO(s)	Within Day Obligation(s)
YoY	Year on Year

ANNEX II: LIST OF BALANCING ZONES IN GY 2017/18 AND GY 2018/19

Acronym	Country	Balancing zone
AT	Austria	Austria – Market Area East
BELUX-H	Belgium and Luxembourg[25]	BeLux H-gas
BELUX-L	Belgium	Belgian L-gas
BG-N	Bulgaria	National Balancing zone (NGTN)
BG-T		Transit Balancing zone (GTNTT)
CZ	Czech Republic	Czech Republic Balancing Zone
DE-GP	Germany	Gaspool Germany Market Area
DE-NCG		Net Connect Germany (NCG) Market Area
DK	Denmark	Danish Balancing Zone
JBZ-DK/SE	Denmark and Sweden[26]	Joint Balancing Zone
EE	Estonia[27]	
ES	Spain	Spanish Balancing Zone
FR-PEG Nord	France[28]	France PEG Nord
FR-TRS		Trading Region South
FR-TRF		Trading Region France
GR	Greece	Greek Balancing Zone
HR	Croatia	Croatian Balancing Zone
HU	Hungary	Hungarian Balancing Zone
IE	Ireland	Irish Balancing Zone
IT	Italy	Italian Balancing Zone
LT	Lithuania	Lithuanian Balancing zone
LV	Latvia	Latvian Balancing zone
NL(GTS)	The Netherlands[29]	Dutch Balancing Zone
PL-H	Poland	High-methane gas Balancing area (H-Gas)
PL-L[30]		Low methane Balancing area (L-Gas)
PL-TGPS		Transit Gas Pipeline System (TGPS)
PT	Portugal	Portuguese Balancing Zone
RO	Romania	Romanian National Transmission System
SI	Slovenia	Slovenian Balancing Zone
SK	Slovakia	Slovak Balancing Zone
UK-GB[31]	Great Britain	British Balancing Zone
UK-NI	Northern Ireland	Northern Ireland Balancing zone

25 Belgium and Luxembourg established the first cross-border balancing zone BeLux (H-Gas) in 2015. In Belgium, an additional L-Gas balancing zone (BELUX-L) exists.

26 Denmark and Sweden established a Joint Balancing Zone consisting of a common balancing Area for Danish shippers and Swedish balance administrators with effect as of 1 April 2019.

27 Estonia and Finland held a derogation at 1 October 2019.

28 In France the two existing balancing zones PEG Nord and Trading Region South (TRS) have been merged in one common balancing zone Trading Region France (TRF) from the 1 November 2018. Therefore, results for 2 balancing zones have been presented in GY 2017/18 and from one balancing zone for GY 2018/19.

29 For NL the BAL NC is legally applicable on both TSOs GTS and BBL Company in the Dutch balancing zone. However, BBL is allowed by the NRAs ACM and Ofgem to continue the in=out regime, therefore by definition, no imbalances can occur on the pipeline. Consequently, data for the Effect Monitoring Report have not been collected for BBLC.

30 L-methane Balancing zone connects customers with gas production facilities. The system is isolated and not directly connected with the H-methane balancing area.

31 For the UK two replies were submitted. This reflects the fact that in the UK there are two balancing zones, one covering Great Britain and one covering Northern Ireland. These balancing zones are in different transmission networks and are regulated by different NRAs. In this report Great Britain is referred to as UK-GB and Northern Ireland as UK-NI.

ANNEX III: YEARLY MARKET (ENTRY) VOLUME AND DOMESTIC CONSUMPTION[32]

Figure 30. Yearly Market entry volume [TWh] vs Domestic consumption [TWh] GY 2017/18 (two-page spread)

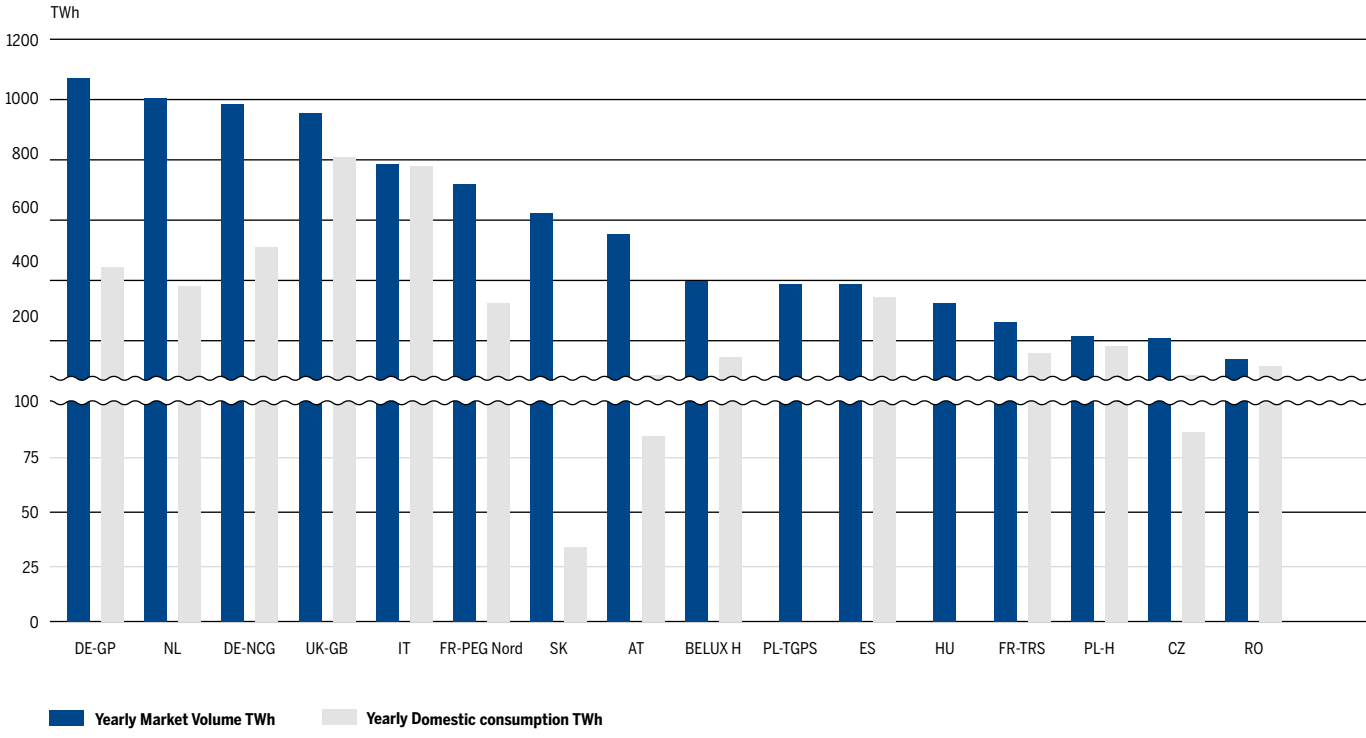
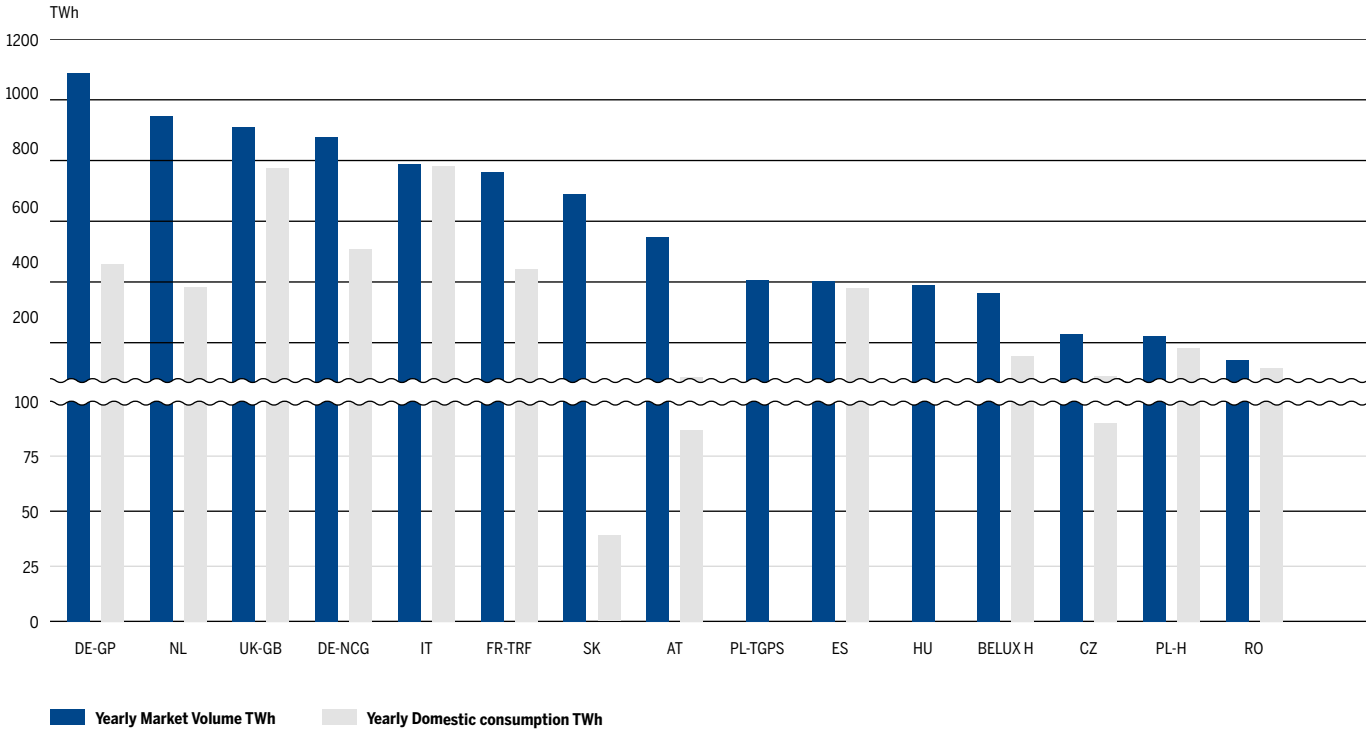
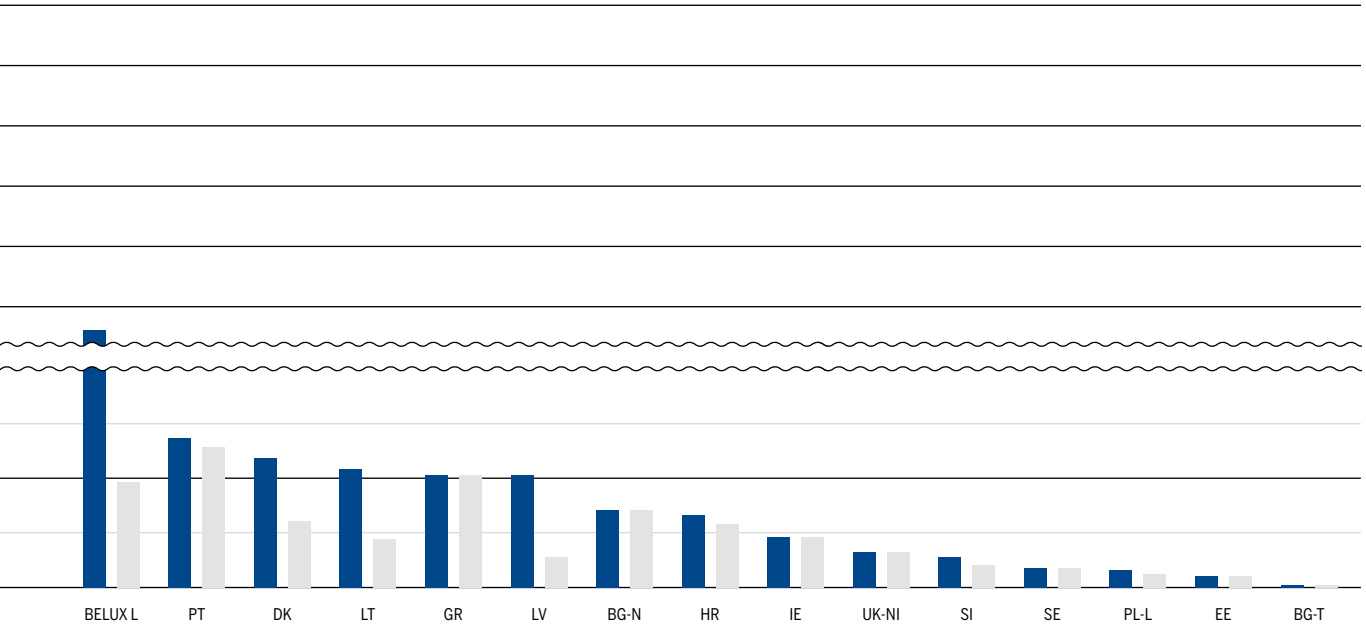
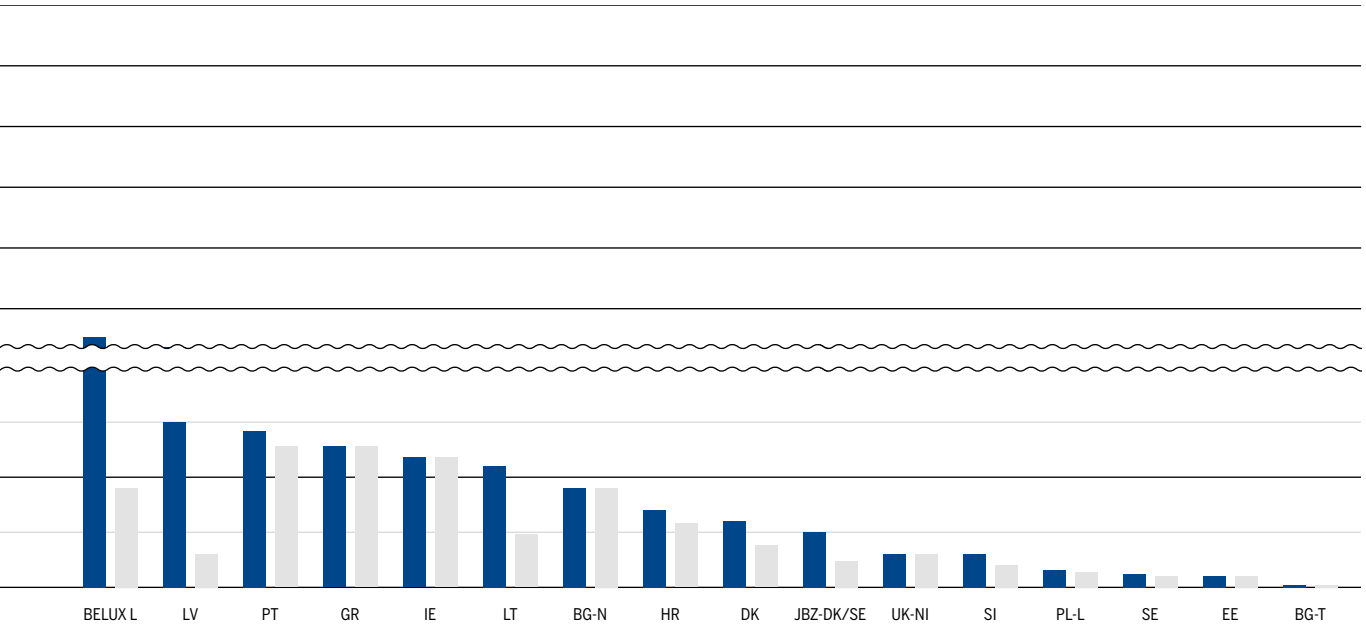


Figure 31. Yearly Market entry volume [TWh] vs Domestic consumption [TWh] GY 2018/19 (two-page spread)



32 HU is excluded since no data on Domestic consumption was available.


BELUX L
PT
DK
LT
GR
LV
BG-N
HR
IE
UK-NI
SI
SE
PL-L
EE
BG-T


BELUX L
LV
PT
GR
IE
LT
BG-N
HR
DK
JBZ-DK/SE
UK-NI
SI
PL-L
SE
EE
BG-T

ANNEX IV: TSO BALANCING THROUGH SHORT-TERM STANDARDISED PRODUCTS (STSPS) VS. TOTAL TSO BALANCING ACTIONS (BAL.1)

Table 1. BAL 1 for GY 2017/18 and GY 2018/19 (%) – Cluster 2015

Balancing zone	WD title	DA title	WD temporal	WD locational	DA locational	WD temporal locational	Balancing Services
AT							
2017/18							
Trading platform	100						
2018/19							
Trading platform	100						
BELUX L							
2017/18							
Trading platform	100						
2018/19							
Trading platform	100						
BELUX H							
2017/18							
Trading platform	100						
2018/19							
Trading platform	100						
DE-GP							
2017/18							
Balancing Platform							0.81
Trading platform	42.50	54.66		0.36	1.67		
2018/19							
Balancing Platform							1.32
Trading platform	49.33	48.39		0.57	0.39		
DE-NCG							
2017/18							
Balancing Platform							
Public Tender (Art.8.3)							0.17
Trading platform	53.21	20.58				26.04	
2018/19							
Balancing Platform							
Public Tender (Art.8.3)							0.04
Trading platform	58.53	22.02				19.41	
DK							
2017/18							
Trading platform	100						
2018/19							
Trading platform	100						

Table 1. BAL 1 for GY 2017/18 and GY 2018/19 (%) – Cluster 2015

Balancing zone	WD title	DA title	WD temporal	WD locational	DA locational	WD temporal locational	Balancing Services
FR-PEG Nord							
2017/18							
Trading platform	98.47			1.53			
FR-TRF							
2018/19							
Trading platform	100						
FR-TRS							
2017/18							
Trading platform	100						
HU							
2017/18							
Trading platform	100						
2018/19							
Trading platform	100						
NL							
2017/18							
Trading platform	32.23		67.77				
2018/19							
Trading platform	27.41		72.59				
SI							
2017/18							
Public Tender (Art.8.3)							0.92
Trading platform	25.72	73.36					
2018/19							
Public Tender (Art.8.3)							
Trading platform	36.09	63.91					
UK-GB							
2017/18							
Trading platform	100						
2018/19							
Trading platform	100						

Table 2. BAL 1 for GY 2017/18 and GY 2018/19 (%) – Cluster 2016

Balancing zone	WD title	DA title	WD locational	DA locational	Other Bal. Product	Balancing Services
CZ						
2017/18						
Public Tender (Art.8.3)						2.61
Trading platform	60.39	37				
2018/19						
Public Tender (Art.8.3)						
Trading platform	88.10	11.90				
ES						
2017/18						
Trading platform	100					
2018/19						
Trading platform	100					
HR						
2017/18						
Public Tender (Art.8.3)						
Trading platform	100					
2018/19						
Trading platform	100					
IT						
2017/18						
Trading platform	71.94				28.06	
2018/19						
Trading platform	77.46				22.54	
PT						
2017/18						
Other Procedure (Art. 8.4)						100
2018/19						
Other Procedure (Art. 8.4)						

Table 3. BAL 1 for GY 2017/18 – Cluster 2019[33]

Balancing zone	WD title	DA title	WD locational	DA locational	Other Bal. Product	Balancing Services
BG-N						
2017/18						
N/A					100	
2018/19						
N/A					100	
BG-T						
2017/18						
N/A					100	
2018/19						
N/A					100	
EE						
2017/18						
Public Tender (Art.8.3)						100
2018/19						
Public Tender (Art.8.3)						100
GR						
2017/18						
Balancing Platform	26.51					
Public Tender (Art.8.3)						73.49
2018/19						
Balancing Platform	67.30	3.23				
Public Tender (Art.8.3)						29.47
IE						
2017/18						
Public Tender (Art.8.3)						67.09
Trading platform	32.91					
2018/19						
Trading platform	100					
LT						
2017/18						
Public Tender (Art.8.3)						59.31
Trading platform	40.69					
2018/19						
Public Tender (Art.8.3)						31.26
Trading platform	68.74					
LV						
2017/18						
Public Tender (Art.8.3)						
Trading platform						
2018/19						
Public Tender (Art.8.3)						49.00
Trading platform	2.59					

33 In Poland-L and TGPS balancing zones no balancing actions have been undertaken in both GYs.

Table 3. BAL 1 for GY 2017/18 – Cluster 2019[33]

Balancing zone	WD title	DA title	WD locational	DA locational	Other Bal. Product	Balancing Services
PL-H						
2017/18						
Balancing Platform						
Public Tender (Art.8.3)						0.14
Trading platform	99.86					
2018/19						
Public Tender (Art.8.3)						0.19
Trading platform	99.81					
RO						
2017/18						
Trading platform		0.58		99.42		
2018/19						
Trading platform	94.73	5.27				
SE						
2017/18						
Weekly trade				100		
2018/19						
Weekly trade				100		
JBZ-DK/SE						
2018/19						
Trading platform	100					
SK						
2017/18						
Balancing Platform		60.87				
Public Tender (Art.8.3)						39.13
2018/19						
Balancing Platform		20.41				
Public Tender (Art.8.3)						79.59
UK-NI						
2017/18						
N/A					100	
2018/19						
N/A					100	

ANNEX V: NUMBERS OF DAYS DURING THE YEAR THAT TSOs ARE TAKING BUY ACTIONS AND SELL ACTIONS VS TOTAL TSO VOLUME[34]

Cluster 2015					
Balancing zone	**Product type**	**n days BUY**	**n days SELL**	**% Total BUY volume vs Total TSO bal actions**	**% TSO SELL volume vs Total TSO bal actions**
AT					
GY 2017/18	WD title	319	162	45 %	55 %
GY 2018/19	WD title	296	193	48 %	52 %
BELUX H-zone					
GY 2017/18	WD title	187	188	59 %	41 %
GY 2018/19	WD title	148	229	34 %	66 %
BELUX L-zone					
GY 2017/18	WD title	182	187	61 %	39 %
GY 2018/19	WD title	194	173	61 %	39 %
DK[35]					
GY 2017/18	WD title	21	38	29 %	71 %
GY 2018/19	WD title	41	15	78 %	22 %
FR-PEG Nord[36]					
GY 2017/18	WD locational	2	0	72 %	28 %
	WD title	75	45		
GY 2018/19	WD title	3	4	37 %	63 %
FR-TRS[37]					
GY 2017/18	WD title	62	78	39 %	61 %
GY 2018/19	WD title	6	11	20 %	80 %
FR-TRF[38]					
GY 2018/19	WD title	57	48	64 %	36 %
DE-GP					
GY 2017/18	Balancing Services	56	2	63 %	37 %
	DA locational	37	9		
	DA title	212	88		
	WD locational	4	9		
	WD title	172	171		

34 The number of days is calculated as sum of each day when the TSO undertakes a balancing action. Days with 0 volume sold/purchased have not been considered. Therefore, the absolute number for 100 % is dependent on each TSO's balancing actions.

35 Only actions until 01/04/2019.

36 Only actions until 01/11/2018.

37 Same as above.

38 Only actions from 01/11/2018.

Cluster 2015					
Balancing zone	**Product type**	**n days BUY**	**n days SELL**	**% Total BUY volume vs Total TSO bal actions**	**% TSO SELL volume vs Total TSO bal actions**
GY 2018/19	Balancing Services	70	26	60 %	40 %
	DA locational	5	4		
	DA title	164	52		
	WD locational	0	4		
	WD title	121	137		
DE-NCG					
GY 2017/18	Balancing Services	6	5	59 %	41 %
	DA title	120	66		
	WD temporal locational	364	362		
	WD title	224	172		
GY 2018/19	Balancing Services	1	3	51 %	49 %
	DA title	114	34		
	WD temporal locational	267	262		
	WD title	147	199		
HU					
GY 2017/18	WD title	23	60	28 %	72 %
GY 2018/19	WD title	11	112	7 %	93 %
NL					
GY 2017/18	WD temporal	36	28	67 %	33 %
	WD title	114	78		
GY 2018/19	WD temporal	46	41	61 %	39 %
	WD title	115	98		
UK-GB					
GY 2017/18	WD title	80	65	52 %	48 %
GY 2018/19	WD title	93	115	41 %	59 %
SI					
GY 2017/18	Balancing Services	0	1	29 %	71 %
	DA title	25	64		
	WD title	28	51		
GY 2018/19	DA title	7	62	13 %	87 %
	WD title	10	47		

Cluster 2016					
Balancing zone	Product type	n days BUY	n days SELL	% Total BUY volume vs Total TSO bal actions	% TSO SELL volume vs Total TSO bal actions
CROATIA					
GY 2017/18	WD title	26	100	19 %	81 %
GY 2018/19	WD title	58	81	41 %	59 %
CZ					
GY 2017/18	Balancing Services	2	1	48 %	52 %
	DA title	19	29		
	WD title	32	37		
GY 2018/19	DA title	8	5	39 %	61 %
	WD title	32	29		
ES					
GY 2017/18	WD title	21	63	27 %	73 %
GY 2018/19	WD title	67	51	71 %	29 %
IT					
GY 2017/18	Other Bal. Product	99	266	69 %	31 %
	WD title	150	80		
GY 2018/19	Other Bal. Product	166	199	66 %	34 %
	WD title	125	89		
PT					
GY 2017/18	Balancing Services	3	0	100 %	0 %
GY 2018/19	No balancing actions				

Cluster 2019					
Balancing zone	Product type	n days BUY	n days SELL	% Total BUY volume vs Total TSO bal actions	% TSO SELL volume vs Total TSO bal actions
BG- N					
GY 2017/18	WD title	191	174	48 %	52 %
GY 2018/19	WD title	212	153	53 %	47 %
BG- T					
GY 2017/18	WD title	176	189	33 %	67 %
GY 2018/19	WD title	172	193	49 %	51 %
EE					
GY 2017/18	Balancing Services	24	3	82 %	18 %
GY 2018/19	Balancing Services	31	0	100 %	0 %
GR					
GY 2017/18	Balancing Services	101	0	86 %	14 %
	WD title	10	11		
GY 2018/19	Balancing Services	57	0	84 %	16 %
	DA title	11	5		
	WD title	122	28		
PL-H					
GY 2017/18	Balancing Services	365	0	48 %	52 %
	WD title	168	199		
GY 2018/19	Balancing Services	365	0	44 %	56 %
	WD title	143	178		
IE					
GY 2017/18	WD title	4	29	52 %	48 %
GY 2017/18	Balancing Services	35	27		
GY 2018/19	WD title	27	63	22 %	78 %
LT					
GY 2017/18	Balancing Services	26	0	100 %	0 %
	WD title	286	0		
GY 2018/19	Balancing Services	66	0	100 %	0 %
	WD title	318	0		
LV					
GY 2017/18	No balancing actions				
GY 2018/19	Balancing Services	1	1	98 %	2 %
	WD title	5	0		

Cluster 2019					
Balancing zone	**Product type**	**n days BUY**	**n days SELL**	**% Total BUY volume vs Total TSO bal actions**	**% TSO SELL volume vs Total TSO bal actions**
RO					
GY 2017/18	DA title	1	0	100 %	0 %
	Other Bal. Product	9	0		
GY 2018/19	DA title	24	1	80 %	20 %
	WD title	188	53		
SK					
GY 2017/18	DA title	3	1	45 %	55 %
GY 2018/19	Balancing Services	3	0		
GY 2018/19	DA title	1	0	20 %	80 %
GY 2018/19	Balancing Services	0	3		
SE					
GY 2017/18	Other Bal. Product	266	83	80 %	20 %
GY 2018/19[39]	Other Bal. Product	166	5	100 %	0 %
JBZ-DK/SE[40]					
GY 2018/19	WD title	25	11	70 %	30 %
UK-NI					
GY 2017/18	Interim Measure	49	26	70 %	30 %
GY 2018/19	Interim Measure	65	9	90 %	10 %

39 Actions until 01/04/2019.

40 Actions from 01/04/2019.

ANNEX VI: YEARLY VOLUME TRADE PER TSO, MARKET ENTRY VOLUME AND PERCENTAGE OF TSO GAS TRADED COMPARED TO THE MARKET VOLUME (BAL 2.1)

	Cluster 2015		
Balancing zone	**Total TSO actions [MWh]**	**Total Market Volume [MWh]**	**BAL 2.1 [%]**
AT			
2017/18	348,228	553,343,979	0.06 %
2018/19	278,420	549,085,650	0.05 %
BELUX-H			
2017/18	1,659,973	396,141,594	0.42 %
2018/19	1,688,416	362,462,661	0.47 %
BELUX-L			
2017/18	546,291	121,015,256	0.45 %
2018/19	461,019	107,525,285	0.43 %
DK			
2017/18	231,961	59,139,458	0.39 %
2018/19	265,019	29,967,711	0.88 %
FR-TRF			
2018/19	2,104,510	760,830,622	0.28 %
FR-PEG Nord			
2017/18	3,724,680	718,196,428	0.52 %
FR-TRS			
2017/18	1,353,240	260,190,628	0.52 %
DE-GP			
2017/18	32,031,132	1,072,286,320	2.99 %
2018/19	15,889,809	1,087,273,435	1.46 %
DE-NCG			
2017/18	45,737,148	984,646,103	4.65 %
2018/19	45,882,704	877,281,640	5.23 %
HU			
2017/18	606,404	324,709,067	0.19 %
2018/19	1,418,513	390,862,382	0.36 %
UK-GB			
2017/18	4,112,490	953,552,348	0.43 %
2018/19	4,815,977	911,148,130	0.53 %
NL			
2017/18	3,313,963	1,004,250,865	0.33 %
2018/19	4,354,188	946,653,898	0.46 %
SI			
2017/18	238,343	14,245,083	1.67 %
2018/19	242,314	14,635,991	1.66 %

Cluster 2016			
Balancing zone	**Total TSO actions [MWh]**	**Total Market Volume [MWh]**	**BAL 2.1 [%]**
HR			
2017/18	415,785	33,120,799	1.26 %
2018/19	471,583	34,523,128	1.37 %
CZ			
2017/18	912,002	207,245,089	0.44 %
2018/19	530,012	228,352,340	0.23 %
ES			
2017/18	2,078,839	386,139,890	0.54 %
2018/19	3,723,064	401,787,913	0.93 %
Italy			
2017/18	20,538,507	783,820,192	2.62 %
2018/19	20,813,545	789,436,371	2.64 %
PT			
2017/18	18,000	68,206,940	0.03 %
2018/19	0	70,789,767	0.00 %

Cluster 2019			
Balancing zone	Total TSO actions [MWh]	Total Market Volume [MWh]	BAL 2.1 [%]
BG-N			
2017/18	559,297	34,581,199	1.62 %
2018/19	414,053	44,625,296	0.93 %
BG-T			
2017/18	34,362	797,121	4.31 %
2018/19	82,208	939,355	8.75 %
EE			
2017/18	61,740	5,245,648	1.18 %
2018/19	39,480	4,944,116	0.80 %
GR			
2017/18	319,730	51,414,905	0.62 %
2018/19	1,122,664	64,135,356	1.75 %
IE			
2017/18	424,795	22,744,852	1.87 %
2018/19	453,264	59,071,783	0.77 %
LT			
2017/18	37,376	53,792,243	0.07 %
2018/19	44,668	55,041,991	0.08 %
LV			
2017/18	0	50,721,291	0.00 %
2018/19	37,014	74,711,016	0.05 %
PL-H			
2017/18	1,980,658	215,753,033	0.92 %
2018/19	1,560,415	222,716,555	0.70 %
PL-L			
2017/18	0	8,181,540	0.00 %
2018/19	0	8,481,415	0.00 %
PL-TGPS			
2017/18	0	386,945,954	0.00 %
2018/19	0	404,556,832	0.00 %
RO			
2017/18	171,450	137,187,984	0.12 %
2018/19	895,921	143,725,215	0.62 %
SK			
2017/18	23,920	623,796,108	0.00 %
2018/19	17,640	687,525,918	0.00 %
SE			
2017/18	54,280	9,318,887	0.58 %
2018/19	24,920	5,809,046	0.43 %
JBZ-DK/SE			
2018/19	162,393	25,357,220	0.64 %
UK-NI			
2017/18	133,000	15,618,769	0.85 %
2018/19	141,000	15,434,500	0.91 %

ANNEX VI: YEARLY VOLUME TRADE PER TSO, DOMESTIC CONSUMPTION AND PERCENTAGE OF TSO GAS TRADED COMPARED TO THE DOMESTIC CONSUMPTION (BAL 2.2)

Table 4. BAL 2.2 Cluster 2015

Balancing zone	Total TSO actions [MWh]	Total Market Volume [MWh]	BAL 2.1 [%]
AT			
2017/18	348,228	83813524	0.42 %
2018/19	278,420	87389129	0.32 %
BELUX H-zone			
2017/18	1,659,973	145,075,194	1.14 %
2018/19	1,688,416	155,433,510	1.09 %
BELUX L-zone			
2017/18	546,291	47,768,492	1.14 %
2018/19	461,019	45,354,141	1.02 %
Denmark			
2017/18	231,961	29,964,904	0.77 %
2018/19	265,019	19,104,079	1.39 %
FR-TRF			
2018/19	2,104,510	443,874,797	0.47 %
FR-PEG Nord			
2017/18	3,724,680	325,329,047	1.14 %
FR-TRS			
2017/18	1,353,240	156,946,423	0.86 %
DE-GP			
2017/18	32,031,132	442,989,934	7.23 %
2018/19	15,889,809	458,501,912	3.47 %
NBP			
2017/18	4,112,490	809,813,650	0.51 %
2018/19	4,815,977	774,272,198	0.62 %
DE-NCG			
2017/18	45,737,148	510,312,530	8.96 %
2018/19	45,882,704	507,535,492	9.04 %
NL			
2017/18	3,313,963	378,923,318	0.87 %
2018/19	4,354,188	384,166,915	1.13 %
SI			
2017/18	238,343	9,618,827	2.48 %
2018/19	242,314	9,686,972	2.50 %

Table 5. BAL 2.2 Cluster 2016

Balancing zone	Total TSO actions [MWh]	Total Market Volume [MWh]	BAL 2.1 [%]
CROATIA			
2017/18	415,785	28,759,991	1.45 %
2018/19	471,583	29,379,636	1.61 %
CZ			
2017/18	912,002	85,911,029	1.06 %
2018/19	530,011	89,715,612	0.59 %
ES			
2017/18	2,078,839	343,253,509	0.61 %
2018/19	3,723,064	379,472,766	0.98 %
Italy			
2017/18	20,538,507	776,871,068	2.64 %
2018/19	20,813,545	781,649,738	2.66 %
PT			
2017/18	18,000	64,173,618	0.03 %
2018/19	0	64,181,813	0.00 %

Table 6. BAL 2.2 Cluster 2019[41]

Balancing zone	Total TSO actions [MWh]	Total Market Volume [MWh]	BAL 2.1 [%]
BG- N			
2017/18	559,297	34,602,870	1.62 %
2018/19	414,053	44,591,970	0.93 %
BG- T			
2017/18	34,362	808,682	4.25 %
2018/19	82,208	939,258	8.75 %
EE			
2017/18	61,740	5,238,742	1.18 %
2018/19	39,480	4,924,680	0.80 %
Greece			
2017/18	319,730	51,381,108	0.62 %
2018/19	1,122,664	64,367,510	1.74 %
PL-H			
2017/18	1,980,658	182,045,244	1.09 %
2018/19	1,560,415	183,741,570	0.85 %
IE			
2017/18	424,795	22,744,852	1.87 %
2018/19	453,264	59,071,783	0.77 %
LT			
2017/18	37,376	22,314,909	0.17 %
2018/19	44,668	23,832,228	0.19 %
LV			
2017/18	0	14,368,078	0.00 %
2018/19	37,014	14,997,510	0.25 %
RO			
2017/18	171,450	116,275,565	0.15 %
2018/19	895,921	115,866,935	0.77 %
SK			
2017/18	23,920	33,991,539	0.07 %
2018/19	17,640	38,623,793	0.05 %
SE			
2017/18	54,280	8,702,882	0.62 %
2018/19	24,920	4,619,870	0.54 %
JBZ-DK/SE			
2018/19	162,393	12,300,772	1.32 %
UK-NI			
2017/18	133,000	15,654,407	0.85 %
2018/19	141,000	15,482,888	0.91 %

41 Results for Bulgaria Transit balancing zone and Poland TGPS are excluded from the results since these routes do not supply end-customers.

ANNEX VIII: NET TSO BALANCING VOLUME AS % OF DOMESTIC VOLUME (BAL.3) VS. NET SHIPPER IMBALANCE VOLUME AS % OF DOMESTIC VOLUME (BAL.4)

Table 7. BAL 3 and BAL 4 indicators Cluster 2015, GY 2017/18 and GY 2018/19

Balancing zone	Net Shippers Imbalances (MWh)	Net TSO Sell-Buy (MWh)	Domestic consumption (MWh)	BAL 3	BAL 4
BELUX L					
2017/18	– 31,467	– 115,663	47,768,492	– 0.24 %	– 0.07 %
2018/19	– 65,062	– 98,859	45,354,141	– 0.22 %	– 0.14 %
BELUX H					
2017/18	– 4,403	– 284,203	145,075,194	– 0.20 %	0.00 %
2018/19	637,843	540,138	155,433,510	0.35 %	0.41 %
DE-GP					
2017/18	– 2,660,887	– 8,336,582	442,989,934	– 1.88 %	– 0.60 %
2018/19	– 626,967	– 3,318,011	458,501,912	– 0.72 %	– 0.14 %
DE-NCG					
2017/18	– 2,565,455	– 8,347,536	510,312,530	– 1.64 %	– 0.50 %
2018/19	– 700,501	– 709,947	507,535,492	– 0.14 %	– 0.14 %
DK					
2017/18	– 115,805	95,161	29,964,904	0.32 %	– 0.39 %
2018/19	– 171,191	– 150,191	19,104,079	– 0.79 %	– 0.90 %
FR-PEG Nord					
2017/18	– 244,693	– 1,627,980	325,329,047	– 0.50 %	– 0.08 %
FR-TRF					
2018/19	414,018	– 587,110	443,874,797	– 0.13 %	0.09 %
FR-TRS					
2017/18	1,424,977	310,220	156,946,423	0.20 %	0.91 %
HU					
2017/18	370,601	272,590	0	0.00 %	0.00 %
2018/19	1,224,834	1,207,865	0	0.00 %	0.00 %
NL					
2017/18	4,051,144	– 1,110,136	378,923,318	– 0.29 %	1.07 %
2018/19	3,502,261	– 977,229	384,166,915	– 0.25 %	0.91 %
SI					
2017/18	131,911	98,909	9,618,827	1.03 %	1.37 %
2018/19	197,862	181,458	9,686,972	1.87 %	2.04 %
UK-GB					
2017/18	– 852,815	– 141,964	809,813,650	– 0.02 %	– 0.11 %
2018/19	– 655,913	857,291	774,272,198	0.11 %	– 0.08 %

Table 8. BAL 3 and BAL 4 indicators Cluster 2016, GY 2017/18 and GY 2018/19

Balancing zone	Net Shippers Imbalances (MWh)	Net TSO Sell-Buy (MWh)	Domestic consumption (MWh)	BAL 3	BAL 4
CZ					
2017/18	66,319	35,869	85,911,029	0.04 %	0.08 %
2018/19	188,468	119,604	89,715,612	0.13 %	0.21 %
ES					
2017/18	1,067,066	956,847	343,253,509	0.28 %	0.31 %
2018/19	– 2,091,427	– 1,534,934	379,472,766	– 0.40 %	– 0.55 %
HR					
2017/18	246,481	256,121	28,759,991	0.89 %	0.86 %
2018/19	94,857	85,193	29,379,636	0.29 %	0.32 %
IT					
2017/18	– 8,665,031	– 7,786,736	776,871,068	– 1.00 %	– 1.12 %
2018/19	– 5,002,706	– 6,474,577	781,649,738	– 0.83 %	– 0.64 %
PT					
2017/18	– 109,400	– 18,000	64,173,618	– 0.03 %	– 0.17 %
2018/19	– 19,141	0	64,181,813	0.00 %	– 0.03 %

Table 9. BAL 3 and BAL 4 indicators Cluster 2019, GY 2017/18 and GY 2018/19[42]

Balancing zone	Net Shippers Imbalances (MWh)	Net TSO Sell-Buy (MWh)	Domestic consumption (MWh)	BAL 3	BAL 4
BG-N					
2017/18	– 58,586	25,291	34,602,870	0.07 %	– 0.17 %
2018/19	63,987	– 28,377	44,591,970	– 0.06 %	0.14 %
BG-T					
2017/18	– 9,011	11,562	808,682	1.43 %	– 1.11 %
2018/19	– 7,008	1,031	939,258	0.11 %	– 0.75 %
EE					
2017/18	– 4,760	– 39,270	5,238,742	– 0.75 %	– 0.09 %
2018/19	– 680	– 39,480	4,924,680	– 0.80 %	– 0.01 %
GR					
2017/18	– 220,247	– 232,050	51,381,108	– 0.45 %	– 0.43 %
2018/19	– 760,172	– 769,164	64,367,510	– 1.19 %	– 1.18 %
IE					
2017/18	302,963	– 15,685	22,744,852	– 0.07 %	1.33 %
2018/19	225,587	252,451	59,071,783	0.43 %	0.38 %
LT					
2017/18	– 26,685	– 37,376	22,314,909	– 0.17 %	– 0.12 %
2018/19	– 72,162	– 44,668	23,832,229	– 0.19 %	– 0.30 %
LV					
2017/18	– 70815	0	14,368,078	0.00 %	– 0.49 %
2018/19	– 226209	– 35,354	14,997,510	– 0.24 %	– 1.51 %
PL-H					
2017/18	– 39,699	85,192	182,045,244	0.05 %	– 0.02 %
2018/19	30,340	181,513	183,741,570	0.10 %	0.02 %
PL-L					
2017/18	– 4,686	0	6,088,132	– 0.08 %	0.00 %
2018/19	10,164	0	6,636,289	0.15 %	0.00 %
RO					
2017/18	– 178,507	– 171,450	116,275,565	– 0.15 %	– 0.15 %
2018/19	– 580,004	– 545,439	115,866,936	– 0.47 %	– 0.50 %
SE					
2017/18	– 2,625	– 32,440	8,702,882	– 0.37 %	– 0.03 %
2018/19	3,314	– 24,920	4,619,870	– 0.54 %	0.07 %
JBZ-DK/SE					
2018/19	– 78,654	– 66,563	12,300,772	– 0.54 %	– 0.64 %
SK					
2017/18	1,394	2,240	33,991,539	0.01 %	0.00 %
2018/19	11,734	10,440	38,623,793	0.03 %	0.03 %
UK-NI					
2017/18	4,362	– 53,000	15,654,407	– 0.34 %	0.03 %
2018/19	– 34,888	– 114,000	15,482,888	– 0.74 %	– 0.23 %

42 Results for Poland TGPS are excluded from the results since this route do not supply end-customers.

ANNEX IX: YEARLY AVERAGE DAILY BUY/SELL PRICES VS AVERAGE DAILY WEIGHTED AVERAGE PRICE (BAL.5)

GY 2017/18			
Balancing Zone	**Average Daily Buy Prices**	**Average daily WAP**	**Average Daily Sell Prices**
BELUX H-zone	22.02	21.35	20.79
BELUX L-zone	22.19	21.35	20.68
CZ	22.06	21.50	21.01
DE-GP	23.99	21.43	20.29
DE-NCG	23.20	21.47	20.41
ES	24.35	23.75	23.14
FR-PEG Nord	22.34	21.62	20.99
FR-TRS	23.82	23.10	22.46
HU	21.68	21.46	21.25
IT	23.66	23.42	23.22
PL-H	23.45	22.77	22.32
PT	26.96	23.81	22.16
SI	25.95	21.63	17.28
UK-GB	23.99	23.05	22.49

GY 2018/19			
Balancing Zone	**Average Daily Buy Prices**	**Average daily WAP**	**Average Daily Sell Prices**
BELUX H-zone	16.81	16.52	16.08
BELUX L-zone	17.02	16.52	16.07
CZ	17.53	17.13	16.72
DE-GP	17.72	16.82	16.05
DE-NCG	17.85	17.06	16.19
ES	19.34	18.82	18.35
FR-TRF	16.20	15.79	15.34
HU	19.29	19.08	18.85
IE	16.77	16.59	16.33
IT	19.20	18.96	18.73
PL-H	19.25	18.21	17.21
PT	21.83	18.87	17.35
RO	24.43	22.20	19.98
SI	25.96	16.26	14.24
UK-GB	17.73	17.26	16.77

ADDITIONAL NOTE

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