

Framework Guidelines on Gas Balancing in Transmission Systems

Draft for Consultation

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This Document contains the draft Framework Guidelines on Gas Balancing in Transmission Systems, which the Agency for the Cooperation of Energy Regulators (ACER) is preparing pursuant to Article 6 of Regulation (EC) No 715/2009 and on the basis of a request from the European Commission.

The draft Framework Guidelines contained on this document are issued for consultation of ENTSO for Gas and other relevant stakeholders, who are invited to submit their comments by:

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by sending them to:

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Related Documents

CEER/ERGEG documents

- [1] “Gas Balancing in Transmission Systems” Framework Guidelines, 10 March 2011, Ref E10-GNM-13-03
- [2] “Gas Balancing Rules on European Gas Transmission Networks: Draft Pilot Framework Guideline”, Public consultation document, ERGEG, August 2010, Ref: E10-GNM-13-03
- [3] “Pilot Framework Guideline on gas balancing rules - Instructions for responding to the public consultation”, ERGEG, August 2010, Ref: E10-GNM-13-03b
- [4] “Gas Balancing Rules on European Gas Transmission Networks - Draft Pilot Framework Guideline, Initial Impact Assessment”, ERGEG, August 2010, Ref: E10-GNM-13-04

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1. General Provisions

1.1. Introduction

The gas markets in Europe are fragmented, with several balancing zones across the European Union (EU) and different balancing arrangements applying in neighbouring markets. This entrenches the market power of incumbents and increases the barriers to new entry into the EU gas markets. In many Member States, network users do not yet have regular information during the balancing period on whether their portfolio is in balance or have access to liquid wholesale markets to trade flexible gas. This impedes new entrants' ability to balance their portfolios and increases their exposure to imbalance charges. It also means that Transmission System Operators (TSOs) undertake most of the network balancing and, in order to fulfil this task, hold options to significant amounts of flexible gas, via long-term contracts, which could otherwise be traded in the wholesale market. In many balancing regimes, imbalance charges do not reflect the cost of the TSO balancing the gas network. This can result in incentives for inefficient behaviour and cross-subsidies between network users which could be considered discriminatory¹.

1.2. Scope

These Framework Guidelines aim at setting out clear and objective principles for the development of a network code on gas balancing as required by Article 6(2) of Regulation 715/2009² (Gas Regulation).

The network code on gas balancing will apply to balancing regimes for transmission systems within EU borders.

The network code on gas balancing will also apply to arrangements for cross-border balancing, which is the exchange or trade of flexible gas between neighbouring balancing zones and the netting of network users' imbalances across adjacent balancing zones in order to support the development of competition and to facilitate market integration.

1.3. Objective

The network code which is developed on the basis of these Framework Guidelines shall define a European gas balancing regime which is market based and enables network users to trade gas efficiently, including across borders.

¹ Respondents to ERGEG's consultation on a gas balancing draft framework guideline and initial impact assessment¹ shared this assessment. A majority of respondents encouraged ERGEG to introduce a market-based balancing regime, where TSOs' roles are minimised and cost-reflective imbalance charges incentivise network users to balance their portfolios. Where TSOs currently hold long-term contracts to obtain flexible gas, a balancing regime that encourages TSOs to procure flexible gas on a short-term basis would allow flexible gas to be released to the wholesale market, which may enhance competition and trading in markets that currently lack liquidity.

² 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. The requirement for the network code is set out in Article 8, the requirement for the framework guideline in Article 6.

In fact, the over-arching objective of the network code on gas balancing is to promote the harmonisation of balancing regimes in order to encourage and facilitate gas trading across systems and to support the development of competition within the EU, both between Member States and within each Member State, and thereby move towards greater market integration.

The specific objective for the network code on gas balancing is to create balancing rules, including network-related rules on nominations procedures, rules for imbalance charges and rules for operational balancing between TSOs' systems as required by Article 8(6)(j) of the Gas Regulation.

The network code on gas balancing shall also have regard to the requirements in Article 21 of the Gas Regulation, i.e. it shall define balancing rules that are fair, non-discriminatory, based on objective criteria and which are market-based while reflecting the resources available to the TSO.

To this end, article 21 of the Gas Regulation requires TSOs to:

- provide sufficient, well-timed and reliable information on the balancing status of users to enable network users to balance (Article 21(2));
- apply imbalance charges that are cost-reflective to the extent possible, whilst providing appropriate incentives on network users to balance their inputs and off takes of gas (Article 21(3)); and
- endeavour to harmonise and streamline balancing structures and imbalance charges in order to facilitate gas trading (Article 21(4)).

Therefore, the balancing regime defined by the network code on gas balancing shall include cost-reflective imbalance charges to the extent possible, set on the basis of the marginal price, to incentivise network users to balance their portfolio efficiently. Network users shall receive up to date information on their own balancing position as well as the system's balancing status during the balancing period to enable them to do this. This will minimise the TSO's role in balancing and increase that of market participants, if flexible gas is released and wholesale markets, which allow for the trade of flexible gas between network users either bilaterally or via an exchange, are developed in parallel.

Where there is a need for the TSO to procure balancing services, it shall do so on the wholesale market on an equal footing with network users. However, where trading on wholesale markets is limited, it may be appropriate, as an interim step, for the TSO to procure balancing services on a balancing platform, where it acts as the counterparty to all trades of flexible gas. Balancing platforms could be used by more than one TSO, potentially in different countries, where sufficient cross-border interconnection capacity exists³.

³ In this respect, TSOs shall regularly explore opportunities to improve the way in which they interact across balancing zones, including potentially merging or coupling these, in order to allow flexible gas to move where it is valued most. The network code(s) adopted according these Framework Guidelines will result in some harmonisation of the products which TSOs procure, which is also expected to enhance cross-border trade.

The network code on gas balancing shall also define a harmonised balancing period of 24 hours with cash-out at the end of the gas day⁴. Where the TSO needs to take balancing actions within this balancing period, it will procure these balancing services on the wholesale market – or, in the interim, on the balancing platform.

1.4. Definitions

For the purpose of these Framework Guidelines, the following definitions apply:

- **Balancing period** – the period within which the off-take of an amount of natural gas, expressed in units of energy, must be offset by every network user by means of the injection of the same amount of natural gas into the transmission system in accordance with the transportation contract or the network code on gas balancing (as defined in Article 2(10) of the Gas Regulation).
- **Balancing platform** – a trading platform on which flexible gas is bought and sold, balancing services are procured and the TSO is party to every trade.
- **Balancing regime** – the rules and agreements that apply to portfolio and TSO balancing, including the procurement of balancing services and imbalance charges.
- **Balancing services** – additional services (i.e. additional to the buying and selling of flexible gas) that a TSO may buy in order for the system to remain within safe operational limits, for example the ability to inject gas into storage.
- **Balancing zone** – an entry-exit system to which a specific balancing regime is applicable.
- **Cross-border balancing zone** – a balancing zone which consists of (parts of) more than one Member State.
- **Cross-border balancing** – the exchange or trading of flexible gas between neighbouring balancing zones in order to improve efficiency and facilitate market integration and the arrangements of network users to net their imbalances across two adjacent balancing zones. These balancing zones could be within the same, or in adjacent Member States.
- **Flexible gas** – gas required to meet short term fluctuations in demand by customers. It also contributes to overall system security by responding to unexpected system outages.

⁴ Some respondents to ERGEG's consultation recognised that balancing obligations (either technical or financial rules) on network users may need to be imposed during the day. However, some opposed obligations which require network users to maintain a particular balance in their portfolios during the day and which if not respected lead to a financial penalty being imposed.

- **Imbalance** – the situation in which individual network users’ injections into the system differ from their off-takes from the system or in which aggregate inputs to the system differ from aggregate off-takes from the system in a balancing period. This may result in either individual network users and/or the TSO buying or selling gas (or the TSO buying balancing services) in order to offset the imbalance. Inputs into and off-takes from the transmission system can take the form of either physical gas at a specific point or gas exchanged at a virtual point in the market.
- **Imbalance charge** – the charge applied by a TSO to network users (or payment received by a network user) for financial settlement of the differences between their inputs into and off-takes from the gas transmission system.
- **Linepack** – the storage of gas by compression in gas transmission and distribution systems, but not including facilities reserved for TSOs carrying out their functions, as defined in Article 2(15) of Directive 2009/73/EC⁵ (Gas Directive).
- **Liquidity** – the ability to quickly buy or sell reasonable volumes of gas without causing a significant change in price and without incurring significant transaction costs. A key feature of a liquid market is that it has a large number of buyers and sellers willing to transact at all times. The assessment of market liquidity shall include a consideration of the volumes traded, churn rates and the number of players on the market.
- **Local balancing** – the actions undertaken by the TSOs addressing imbalances at particular locations within the system.
- **Long-term flexible gas products** – gas products traded for more than two days and up to one year, i.e. including weekly, monthly and annual durations.
- **Marginal Buy Price** – a price based on either the highest price of any gas balancing trading to which the TSO is a party during the balancing period (excluding locational or temporal products) or based on the price of gas traded on that day (which may include a small adjustment to incentivise network users to balance).
- **Marginal Sell Price** – a price based on either the lowest price of any gas balancing trading to which the TSO is a party during the balancing period (excluding locational or temporal products) or based on the price of gas traded on that day (which may include a small adjustment to incentivise network users to balance).
- **Network user** – a party that uses the transmission system to transport gas from one location to another or to trade gas at the virtual trading point.
- **Portfolio balancing** – the actions undertaken by network users in order to help ensure that their off-takes from a system match their inputs onto the same system over the duration of the relevant balancing period.

⁶ The need for TSO balancing arises from differences between the aggregate inputs and off-takes of network users, but may be unrelated to network users being out of balance individually.

- **Short-term flexible gas products** – gas products traded intraday, day-ahead, two days-ahead of gas delivery or for 2 days over a weekend.
- **Transmission system (or system)** – a high pressure transmission network consisting of terminals, compressor stations, pipeline systems and off-take points within a Member State. For the purposes of these Framework Guidelines, Liquefied Natural Gas (LNG) and storage facilities are not included in the transmission system because, for the purposes of gas balancing, whilst very important as providers of flexible gas, these facilities are treated like any other entry or exit point.
- **TSO balancing** – the actions undertaken by the TSO to ensure that the system stays within its accepted operational limits⁶.
- **Wholesale market** – a physical or virtual point at which network users trade gas with each other either bilaterally, or via an exchange. The TSO can also trade in this market for balancing purposes. A range of products can be traded including: financial/virtual, physical (where the gas is required to be delivered at a certain point) and temporal (where the gas is required to be delivered during a certain time period within the gas day).

In the above definitions, all references to the Transmission System Operator (TSO) refer to the entity responsible for keeping the system in balance. Where this is a party different from TSO, references to TSOs in this document relate to that party.

1.5. Implementation

Given the different stages of development of competition and liquidity in the gas markets across Europe, common balancing rules may only be achieved gradually. The network code on gas balancing shall therefore define balancing rules that are consistent with the ultimate goal of a common balancing regime, but that allow for TSOs to implement interim steps, where this may be appropriate. TSOs shall only implement interim steps if the NRA has approved this, based on an assessment of the development of market liquidity.

Member States may put in place additional gas balancing arrangements that shall apply during an emergency (as defined in Article 10(3)(c) of Regulation (EC) No 994/2010⁷ concerning measures to safeguard security of gas supply). Some guidance on these additional arrangements is already provided in that Regulation and more guidance will eventually be provided in the network code on operational procedures in an emergency (according to Article 8(6)(f) of the Gas Regulation).

⁶ The need for TSO balancing arises from differences between the aggregate inputs and off-takes of network users, but may be unrelated to network users being out of balance individually.

⁷ Regulation (EU) No 994/2010 of the European Parliament and of the Council of 20 October 2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC.

For the avoidance of doubt, the methodologies establishing the terms and conditions for the provision of gas balancing services that NRAs fix or approve under the provisions of Article 41(6)(b) of the Gas Directive shall be consistent with the network code on gas balancing.

The network code on gas balancing shall require the European Network of Transmission System Operators for Gas (ENTSO-G) to regularly review the progress towards its implementation.

2. Principles for network users and TSO roles and responsibilities

2.1. General provisions

The network code on gas balancing shall provide for network users to balance their portfolios by matching their inputs into and off-takes from each system during the relevant balancing period. The network code shall provide that balancing responsibilities are shared between the TSOs and network users, in accordance with the requirements specified below.

The network code on gas balancing shall create EU wide rules on gas balancing. When implementing the network code, TSOs shall consider the impact of their balancing rules on the development of trading with adjoining transmission systems. Where this is needed to implement the code effectively, TSOs shall coordinate balancing activities with other TSOs.

The network code on gas balancing shall not prevent TSOs from allocating linepack to network users if approved by the relevant NRA. Where linepack is sold, TSOs shall allocate the linepack to network users as a commercial product on a transparent and non-discriminatory basis and it shall be offered at a cost reflective price. The price may also be determined through competitive mechanisms. The decision by the relevant NRA to allocate linepack shall be based on objective criteria, including the physical characteristics of the networks, whether the provision is consistent with Section 4 of these Framework Guidelines and whether offering a linepack product would facilitate a more efficient use of the transmission system.

The network code on gas balancing shall set out that network users, through their portfolio balancing activities, shall take primary responsibility for matching their inputs into a system against customer off-takes from the system during the relevant balancing period. The principle is to provide, as much as possible, for network users to balance their individual portfolios which is likely to minimise the need for TSOs' balancing actions

The network code on gas balancing shall require that TSOs, during its implementation, shall not impose barriers to the development of liquid short term markets.

2.2. Interim measures

The network code on gas balancing may provide network users with tolerance levels that shall reflect genuine system flexibility and user needs and address in particular the needs of small users and new entrants. These tolerances may be free of imbalance charges. Rules for the level of tolerances allocated to categories of network users shall be approved by the relevant NRA and designed so as to not create discrimination, in particular against network users with smaller gas portfolios. Tolerances may be introduced as an interim step which applies where network users do not have access to a liquid short-term wholesale gas market or to sources of flexible gas (including the associated infrastructure) to trade in order to be in a position to balance their portfolios.

3. Buying and selling of flexible gas and balancing services by TSOs

In order for TSOs to ensure that the system is kept within safe operational limits, they need to be able to buy and sell gas and may also need to be able to buy balancing services.

The network code on gas balancing shall require TSOs to procure flexible gas and related balancing services in a way that helps minimise the cost of balancing the system. For the procurement of flexible gas, they shall accept the lowest priced offers or highest priced bids (in other words to trade as close to the market price as possible). TSOs shall be cost neutral in relation to their balancing activities but NRAs may incentivise TSOs to procure efficiently by allowing them to receive a payment if balancing costs are minimised to a certain level, or require them to make a payment if these are above a certain amount.

The network code on gas balancing shall require TSOs' procurement and sale of gas for balancing purposes to be market-based. As such, TSOs should use the wholesale gas market to procure gas in a transparent and non-discriminatory manner, as far as possible on an equal footing with network users and by maximising the amount of their balancing needs to be fulfilled through the buying and selling of within-day products.

3.1. Balancing services and flexible gas products

The network code on gas balancing shall define standardised products and related balancing services that TSOs may buy or sell. These standardised products shall include short-term products, which are traded during the gas day either on a physical basis or through title transfer. They may also include long-term products of up to one year. The long-term products may be either for a particular volume of flexible gas or an option to inject or withdraw a particular volume of flexible gas.

The network code on gas balancing shall require TSOs to maximise the amount of their gas balancing needs to be fulfilled through the buying and selling of short-term standardised products on the wholesale market (or, where the wholesale market is not sufficiently liquid, on the balancing platform). NRAs may design incentive mechanisms to encourage TSOs' compliance with this requirement.

The network code on gas balancing shall require TSOs, when defining the products to be bought or sold, to coordinate the product range with neighbouring markets (or balancing platforms, where the wholesale market is not sufficiently liquid).

In order to allow TSOs to meet the specific balancing needs of their transmission systems, the network code on gas balancing shall permit TSOs to buy or sell non standardised products such as temporal products, in which gas is delivered between defined hours of the day and / or locational products in which gas is to be delivered at certain locations on the system.

3.2. Interim measures

Where a wholesale market is insufficiently liquid, the network code on gas balancing shall provide for TSOs to procure their flexible gas and balancing services on a balancing platform. TSOs shall take account of the current level of market development and shall ensure that implementing this interim step facilitates future procurement of flexible gas on the wholesale market.

The network code on gas balancing shall require TSOs, if using balancing platforms, to buy and sell flexible gas transparently and on a non-discriminatory basis through a system of bids and offers. Any network user shall have the right to participate in the balancing platform. Balancing platforms shall only be used as an interim step towards the creation of a liquid wholesale market and may cover more than one balancing zone. This shall be without prejudice to the possibility of NRA to grant exemptions, as specified below. The network code on gas balancing shall set out criteria on the design of balancing platforms.

The network code on gas balancing shall require TSOs or the undertaking responsible for establishing the balancing platforms, to consider whether a joint balancing platform with neighbouring balancing zones might be established, in accordance with the provisions in Section 7. Where there is sufficient interconnection, it may be efficient for a joint balancing platform to be established for more than one balancing zone. The network code shall specify the arrangements for TSOs to cooperate in using such joint balancing platforms.

The network code on gas balancing shall allow TSOs to seek from the NRA an exemption from the requirement to establish a balancing platform and instead enter into a contract with one or more providers of flexible gas. This exemption shall only be granted where the NRA is satisfied that, as a result of insufficient interconnection, a balancing platform would not increase liquidity in the market for balancing services and would not enable the TSO to balance the system more efficiently. The price and the terms and conditions of this contract should be published and approved by the relevant NRA. The NRA shall notify its decision, including the justification and all relevant information, to ACER without delay. Within 3 months of receipt of that notification, ACER may request the concerned NRA to amend its decision.

Where long term contracts for the procurement of flexible gas are already in place and provide TSOs with an option to take specific volumes of flexible gas, the network code on gas balancing shall provide for the volumes of flexible gas covered by the option to be reduced. The network code on gas balancing shall include arrangements for TSOs or the undertaking holding the flexible gas to release back to the market any surplus gas which is not required for balancing purposes in any given balancing period, in order that network users have access to greater volumes of flexible gas. ENTSO-G shall consult on the rules of procedure for the release of flexible gas. The relevant NRA(s) may set targets regarding the proportion by which these long term contracts should be reduced. This interim step can increase liquidity in short term gas markets.

4. Balancing period and nomination procedures

4.1. Balancing period

The balancing period is the time interval at the end of which network users are subject to imbalance charges for any net deviations accumulated over the duration of this interval, between their inputs into and off-takes from the system. In other words, at the end of the balancing period network users will be financially charged for any net imbalance over the period and the imbalance of their portfolios shall be reset to zero. For the avoidance of doubt, being financially settled after this interval does not preclude network users from engaging in portfolio balancing activities during the interval.

The network code on gas balancing shall provide that the balancing period for a transmission system is a standardised daily interval, at the end of which network users are cashed out for any deviations, as accumulated over the course of the preceding 24 hours, between their inputs into and off-takes from the system. In the network code this standardisation shall be set out from 5:00 to 5:00 UTC/GMT or any other time period harmonized across the EU as decided in the network code on Capacity Allocation Mechanisms⁸.

Where the TSO needs to take balancing actions during the day, the network code on gas balancing shall provide for the TSO to impose specific obligations relating to network users' inputs and off-takes during the gas day ("within-day obligations"). This shall only occur where, in order to ensure system integrity and to minimise the need for the TSO to take balancing actions, it is necessary to incentivise network users to take appropriate balancing actions during the day.

The network code on gas balancing shall set out for the balancing services required for within-day balancing to be procured in a market-based manner, pursuant to Section 3 of these Framework Guidelines.

⁸ 5.00 to 5.00 UTC/GMT means 6.00 to 6.00 CET - Central European Time.

The network code on gas balancing shall require that within-day obligations shall not act as an undue barrier to new network users entering the market. Where such obligations apply, TSOs may impose on network users a charge for failing to meet the obligations. This charge shall be, to the extent possible, cost reflective and shall not pose any undue barriers on new entry into the European markets or on cross-border trade. The network code on gas balancing shall prohibit certain within-day obligations which would pose undue barriers on new entry into the European gas markets or on cross-border trade. These may include, for example, obligations for network users to match individual inputs and off-takes on an hourly basis.

The network code on gas balancing shall require TSOs to publically consult on any specific within-day obligation it proposes to impose, including the methodology and assumptions used in arriving at the conclusion that the conditions set out above apply. It shall require TSOs to seek NRA approval before imposing any within day obligations. In deciding whether or not to approve such arrangements, the NRA shall consider whether the benefits in terms of the economic and efficient operation of the transmission system outweigh any potential negative impacts. Where concerns have been raised that the obligations proposed by the TSO may adversely impact on cross-border trade, one of the relevant NRAs may refer the proposals to ACER for a decision.

4.2. Nomination procedure

If not covered by other legal obligations, the network code on gas balancing shall set out criteria for nomination and renomination procedures to be harmonised at both sides of the border at interconnection points and consistently across Europe, as these may be needed to enable network users to adjust their own positions and buy or sell flexible gas for balancing purposes. These criteria shall minimise response times by allowing network users to adjust their balance position during the gas day up to a specified time in accordance with other legal obligations. The network code on gas balancing shall prevent TSOs from requiring that network users nominate input volumes which match their output volumes or vice versa.

5. Imbalance charges

5.1. General provisions

The network code on gas balancing shall require TSOs to publish transparent methodologies for the calculation of imbalance charges. It shall establish harmonised principles for these methodologies in accordance with the rules set out below. TSOs shall provide network users with regular and detailed information on how any imbalance charges they incurred were calculated.

The network code on gas balancing shall require TSOs to charge imbalance charges separately from other transmission charges. Imbalance charges shall be reflective of the costs incurred by the TSO in buying gas and balancing services (or the revenues received by the TSO in selling gas) to the extent this is possible. Imbalance charges shall be levied on the network users that were out of balance at the end of the balancing period. Only costs incurred by TSOs from undertaking balancing activities that are not directly attributable to a network user causing imbalances may be shared across all network users. Imbalance charges shall be targeted on the network users contributing to the imbalance and therefore shall not include other charges.

The network code on gas balancing shall require TSOs to have in place imbalance charges that provide appropriate incentives on network users to balance their portfolios, without deterring new market entry or impeding the development of competitive markets. The purpose of such incentives is to ensure that individual network users are incentivised to undertake portfolio balancing activities and potentially avoid incurring imbalance charges, which minimises the need for TSOs to undertake balancing activities.

The network code on gas balancing shall require TSOs to have in place imbalance charges that are consistent with the requirements set out in this Section and which have been approved by the NRA pursuant to Article 41(6)(b) of the Gas Directive.

The network code on gas balancing shall set out that, where TSOs use either the wholesale market or a balancing platform to buy or sell balancing gas, the imbalance charges shall be based on the marginal sell price or the marginal buy price.

Where no balancing action has been taken by the TSO, the imbalance charge shall be based on the price on the wholesale market (excluding locational or temporal products). It may include a small uplift or reduction in order to incentivise network users to balance their portfolios. This uplift or reduction shall be designed and applied in a non-discriminatory manner, so that it does not deter market entry or impede the development of competitive markets.

5.2. Interim measures

Where, because of insufficient liquidity in the wholesale market, the TSO uses a balancing platform for procuring balancing services, the imbalance charge may be based on an administered price or a proxy for a market price. This proxy may be based on the prices in different wholesale gas markets. The imbalance charge may then include a small uplift or reduction in order to incentivise network users to balance their portfolios. This charge should not deter new market entry and must be approved by the relevant NRA to ensure that it still provides an appropriate incentive for the network user to balance its portfolio.

6. TSO information provision obligations

The network code on gas balancing shall provide that aggregate network user input and off-take information is made available by the TSO in a clear, timely manner and on the same timescale to all network users in order for them to be able to take necessary actions to correct their imbalances.

It is also important that network users are aware of TSO actions to buy and sell gas from network users or other TSOs. Regular information is also required on the overall status of the system. Consistency across Europe is also required in how information is published to prevent information barriers hindering cross border trade.

The network code on gas balancing shall require TSOs to set out the detailed information needed to comply with the provisions outlined below.

The network code on gas balancing shall require TSOs to provide, free of charge, to each network user the available information regarding its inputs on to the system and off-takes from the system at appropriate intervals during the balancing period in order for network users to be able to balance their portfolios. Appropriate intervals shall be at least twice a day or more frequently if necessary to allow network users to comply with any within-day obligations (as set out in Section 4.1).

The network code shall require Distribution System Operators (DSOs) to cooperate with TSOs to enable TSOs to comply with the requirements on information provision set out in this Section. ENTSO-G shall involve DSOs in the drafting of the relevant sections of the network code on gas balancing.

In the absence of information being metered during the balancing period and in order to facilitate new entry, the network code on gas balancing shall oblige TSOs to provide a forecast of off-take volumes for non-daily metered customers at the day-ahead stage. The TSO shall provide updates of this forecast at appropriate intervals during the balancing period, at least twice a day, unless network users are able to fulfil their balancing obligations with information provided day-ahead, e.g. they are cashed out against day-ahead off-take forecasts.

In accordance with Chapter 3 of Annex 1 to the Gas Regulation, the network code on gas balancing shall provide that TSOs publish, per balancing zone, the amount of gas in the transmission system at the start of each gas day and the forecast of the amount of gas in the transmission system at the end of each gas day. The forecast amount of gas for the end of the gas day shall be updated on an hourly basis throughout the gas day. If imbalance charges are calculated on an hourly basis, the transmission system operator shall publish the amount of gas in the transmission system on an hourly basis. Alternatively, TSOs shall publish, per balancing zone, the aggregate imbalance position of all users at the start of each balancing period and the forecast of the aggregated imbalance position of all users at the end of each gas day. If the national regulatory authority is satisfied that such information could give room to potential abuse by network users, it may decide to exempt the transmission system operator from this obligation.

7. Cross-border cooperation

The network code on gas balancing shall require relevant TSOs to cooperate in order to integrate European gas markets by merging entry and exit zones or create cross-border balancing zones wherever this is technically feasible and economically reasonable or through other means such as market coupling.

For that purpose relevant TSOs shall consult on proposals to integrate European gas markets, including an impact assessment of the expected costs and benefits and on the timeline for completion. The proposal shall be subject to approval by the relevant NRAs. TSOs shall notify ACER at the beginning of this approval process to enable its opinion to be considered in the NRAs decision.

The network code on gas balancing shall require ENTSO-G to regularly review the progress of harmonisation of rules in adjacent balancing zones in order to identify possible mergers of entry-exit zones, the creation of cross-border balancing zones and market coupling. The review will also consider whether there are additional measures needed to harmonise rules, which may facilitate the achievement of cross-border balancing zones.

The network code on gas balancing shall include proposals for TSOs to implement cross-border balancing projects in the European gas regions. In developing these proposals, TSOs will consult on options for cross-border balancing, including but not restricted to arrangements for:

- shipper-led cross-border portfolio balancing, which would allow network users to net their imbalances between cross-border neighbouring balancing zones; this shall be without prejudice to a fair allocation of balancing costs among network users of interconnected balancing zones;
- cross-border TSO balancing, which would allow TSOs to act as intermediaries to facilitate access to flexible gas in neighbouring markets (for example by allowing their neighbouring TSOs to accept bids and offers for balancing services in their balancing zone); and
- a joint balancing platform for TSOs in neighbouring balancing zones to buy and sell balancing gas, where sufficient interconnection exists.

The cross-border balancing arrangements envisaged in the network code on gas balancing shall be based on the results of a public consultation, which shall include a cost/benefit impact assessment of the options for cross-border balancing.

ENTSO-G shall share the results of its consultation with ACER and the NRAs.

The network code shall also require TSOs to implement Operational Balancing Accounts with adjacent TSOs to address steering differences. This shall eliminate the balancing risk for network users purely transporting gas through one or more balancing zones to another balancing zone.

These requirements shall not prevent TSOs in any of the gas regions (as defined in the European regional initiatives) from bringing forward or consulting on proposals to merge balancing zones or for cross-border balancing in the meantime.

8. Compliance

The network code on gas balancing shall specify that within 12 months after its adoption TSOs shall comply with its requirements. This includes the adaptation of existing contracts and, where relevant, national network codes. NRAs may allow for an additional 12 months for the requirements to be implemented, provided that TSOs are not implementing any of the requirements set out as interim steps.

Where TSOs implement any of the requirements known as interim steps, TSOs shall send a report explaining why this is the case to the competent NRA and to ACER. The report shall propose a roadmap including a plan for moving away from the interim steps and shall be submitted to the NRA and ACER every twelve months. TSOs shall publicly consult on these reports before their submission to the NRA and ACER. The competent NRA, taking full account of ACER's view, shall approve the roadmap or may require the TSO to modify it.

ACER will review the progress reports set out above in the framework of its monitoring activity according to Article 9(1) of the Gas Regulation.