

Implementation of the Balancing Network Code: an overview of TSOs' main challenges



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1. Background

At the Madrid Forum XXIII of 17-18 April 2013, ENTSOG presented an update on the Balancing Network Code (hereafter BAL NC). The presentation emphasised that a well-functioning, short-term balancing market presupposes a carefully designed implementation process that takes into account the different levels of maturity in the various national balancing zones. Subsequently ENTSOG agreed to provide an initial assessment of TSOs implementation of the BAL NC against three implementation scenarios identified in the BAL NC at the Madrid Forum XXIV.¹

The successful implementation of the BAL NC across Europe will necessitate the concerted effort and careful co-ordination and commitment of Transmission System Operators (TSOs), National Regulatory Authorities (NRAs), Distribution System Operators (DSOs), Trading Platform Operators (TPOs) and shippers. Information provision is essential for market functioning and early decisions about the allocation of responsibilities for obtaining, processing and distributing information will enhance the prospects of timely implication of the BAL NC.

Furthermore it must be recognised that the BAL NC can only be considered an enabler of a fully functioning short-term wholesale market; whilst the BAL NC is undoubtedly a necessary condition it is not, on its own, a sufficient condition. Other network codes and rules, in particular CAM and CMP will enhance access to the network. However a properly functioning short term wholesale market requires both buyers and sellers and therefore it is essential that shippers can gain access to gas flexibility, specifically including pipeline gas flexibility, storage and demand side flexibility. Such matters are not addressed in the current suite of approved or to be developed network codes. In addition, fundamental impediments to retail market competition, including inefficient customer switching process or regulated tariffs to end consumers may also need to be reconsidered before the full realisation of a short-term wholesale gas market can be realised.

¹ http://ec.europa.eu/energy/gas_electricity/gas/forum_gas_madrid_en.htm

The purpose of this document is to present an overview of the anticipated challenges when implementing each of the chapters in the BAL NC. This will help comprehend the level of complexity in the various systems and to understand which measures are the most and least demanding during the implementation phase. The document therefore provides a TSO perspective on the potential challenges for the national TSOs; it does not consider any of the other actors' responsibilities but assumes that other actors will deliver their contributions in a timely manner.

2. Questionnaire

ENTSOG circulated a questionnaire to its members regarding the perceived implementation challenges of each chapter in the BAL NC. ENTSOG received 24 responses (two answers from France) representing 23 countries and 34 TSOs.

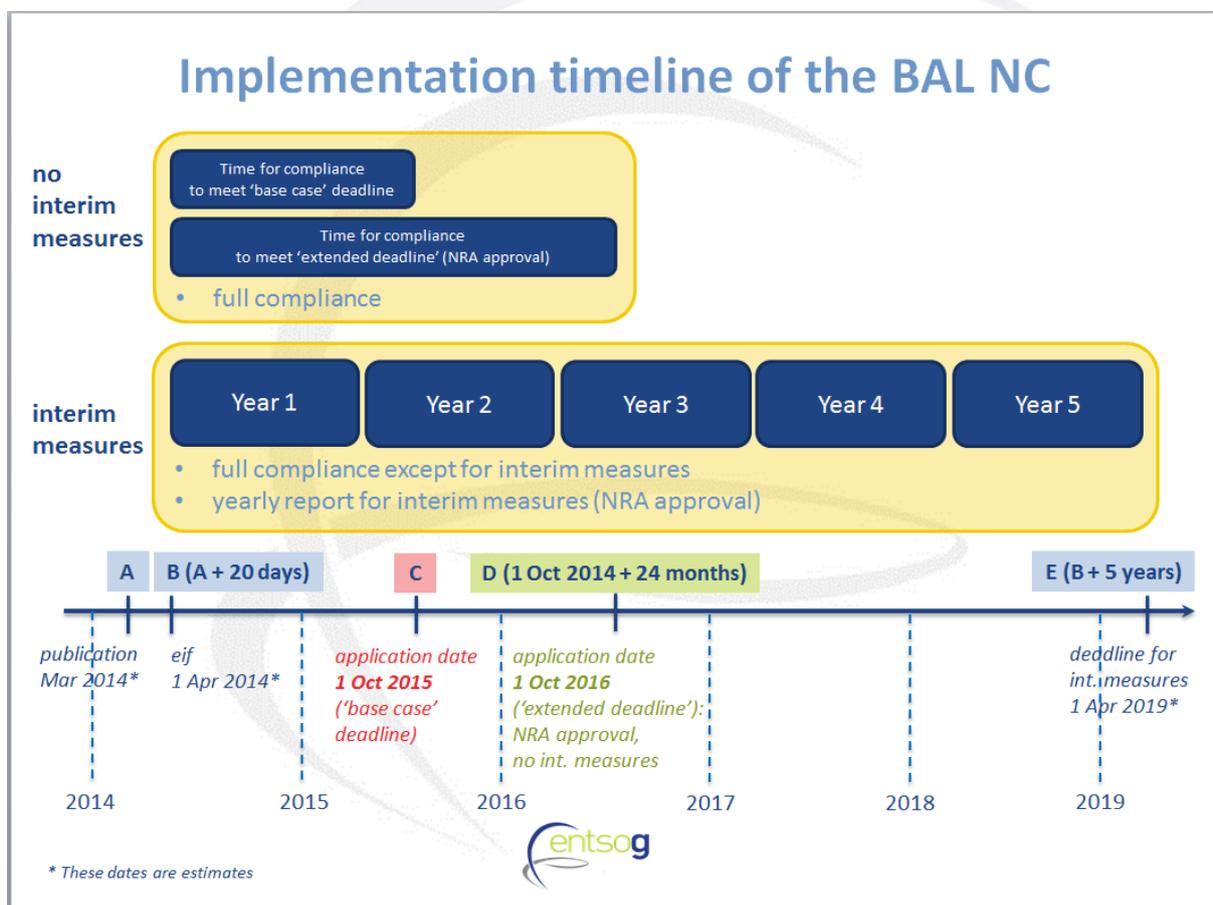
Some assumptions must be taken into consideration when interpreting the results of the questionnaire:

- Finland, Estonia, Latvia and Lithuania are not included in this report due to the exemption from the application of Regulation 715/2009;
- The graphs do not include the responses from IUK interconnector (the interconnector between UK and Belgium) who stated that most of the implementation changes stemming from the BAL NC would require either several or complete changes to their existing model;
- All answers are counted as responses from countries except in the case of France (see explanation below) and Northern Ireland who provided a separate answer from the United Kingdom;
- GRTgaz and TIGF, the two TSOs in France, provided separate answers to the questionnaire. In cases where the two TSOs provided different answers to the same question, the answer from GRTgaz is presented for France and a footnote is provided below the map indicating the answer from TIGF;
- German TSOs and Austrian TSOs each submitted a collective response.

3. Timeline for the implementation of the Balancing Network Code

The timeline for implementing the BAL NC is dependent on the date of its entry into force as well as its application date. The BAL NC received a favourable opinion of the Gas Committee on 2 October 2013. The graph below illustrates the dates for the implementation of the BAL NC as foreseen in its latest version.

Timeline figure



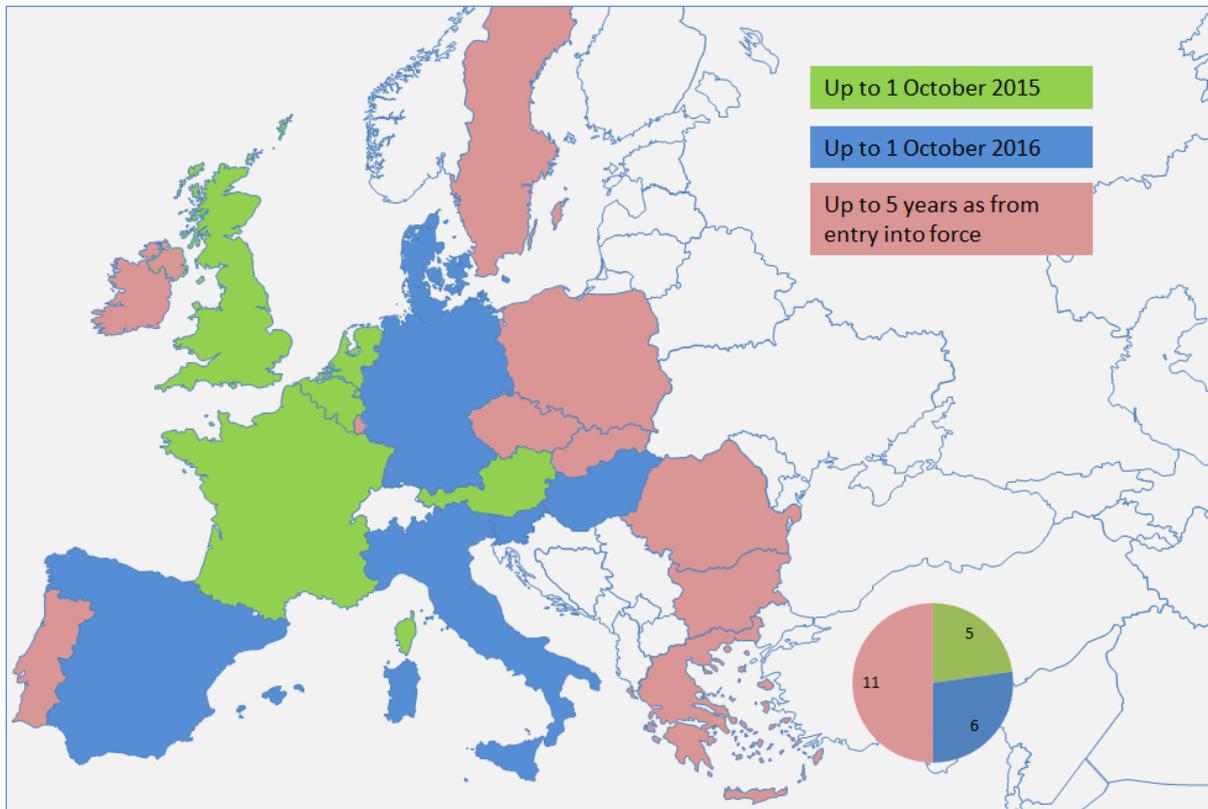
Note: The timeline was not fully determined at the time TSOs completed their responses.

At the time data was collected the expectation was that the BAL NC would be published in the European Journal (marked with 'A' in the graph above) before entering into force (marked with 'B') around 1 April 2014 and that all countries would have 1.5 year from entry into force (eif) to implement the BAL NC in its enduring form (marked with 'C') – but with two exceptions:

- A further 1 year until October 2016 could be allowed for implementation where the TSO asks its NRA who subsequently approves an additional period of up to 12 months to implement the BAL NC, deadline is marked with 'D', or
- A “transitional period” foreseen as a maximum of 5 years after entry into force – the deadline is marked with 'E' – may be envisaged in the absence of sufficient liquidity on the short term wholesale market, and subject to the approval of the NRA following an assessment of the liquidity in the local market. This period would enable the use of “interim measures” specifically designed to encourage progression towards a properly functioning short term wholesale market.

As displayed in map 1, around half of the respondents anticipated either until October 2015, or until October 2016 (subject to approval of the NRA) to implement the provisions of the BAL NC, whereas the other half foresaw up to 5 year implementation period (after entry into force) subject to approval from the NRA. TSOs indicate that significant changes to the national balancing regimes, such as IT modifications and other requirements, need to be implemented in order to comply with the BAL NC. A number of the TSOs who anticipate implementation until October 2016 refer to talks with the NRA that need to be finished before the NRA makes the final decision about the extension.

Map 1: Expected implementation time by country



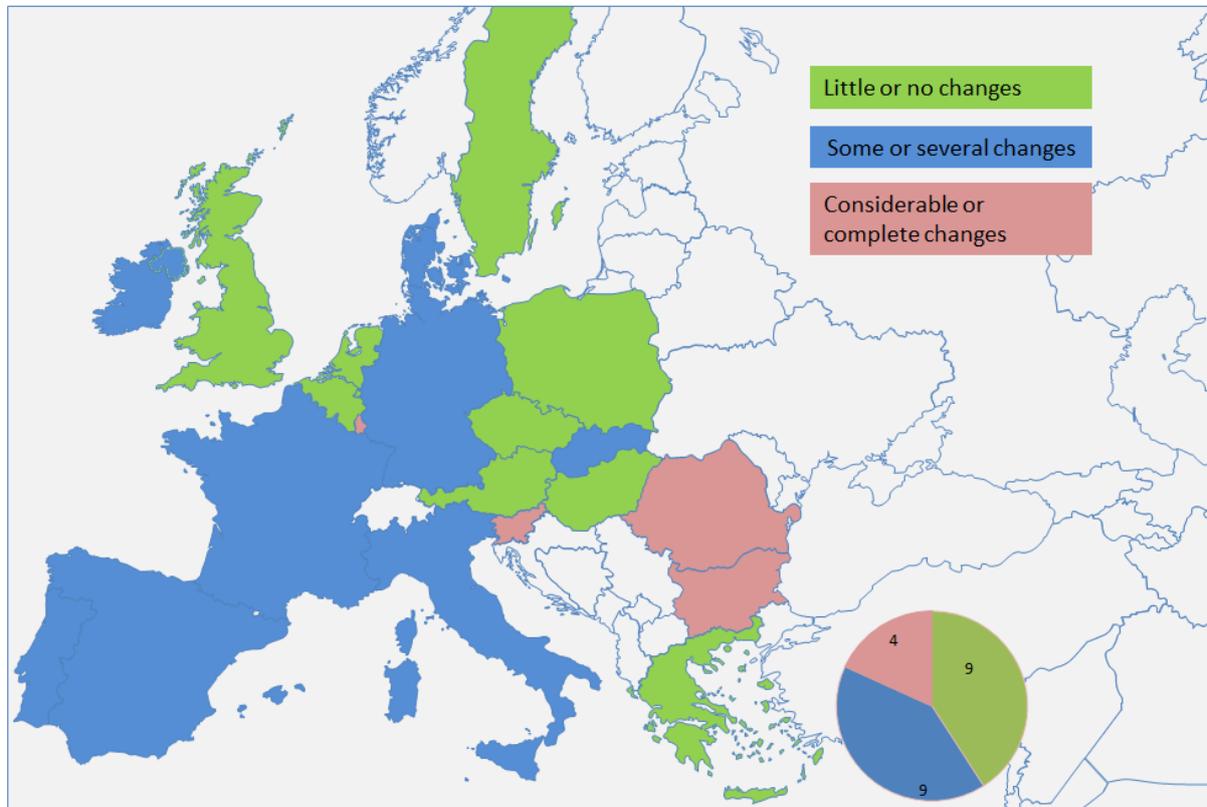
4. Implementation of the Balancing Network Code

4.1. Balancing system

The objective of the BAL NC is that where a well-functioning short term wholesale market can be delivered then shippers shall have the primary incentive to ensure the balancing of the system via financial incentives with the TSO responsible for the residual balancing. The BAL NC foresees the establishment of an entry-exit system with a virtual trading point within each balancing zone to enable shippers to trade, in effect to exchange gas between their portfolios. The transfer of gas between 2 portfolios within a balancing zone should be made through acquiring and disposing trade notifications. Trade notifications are therefore essential in providing a common basis that will enable shippers to trade gas efficiently. Additionally, the facility to trade gas at a virtual trading point is a key enabler to facilitate a market-based procurement mechanism for flexible gas.

A significant number of the respondents indicated that particularly trade notifications and the subsequent change of the lead time would require some changes in the information technology (IT) systems. Some TSOs do not currently use trade notifications and should therefore introduce the virtual trading point concept into their IT systems. TSOs that currently use trade notifications might have to adapt these to accommodate the BAL NC provisions. The BAL NC requires that the confirmation of the completion of the trade must occur within a period of 30 minutes (referred to as the maximum lead time) except where the time when the trade notification becomes effective permits to extend the time for processing for up to 2 hours as set out in the BAL NC.

Map 2: Balancing System - response by country



Note: TIGF have indicated little or no changes when responding to this question.

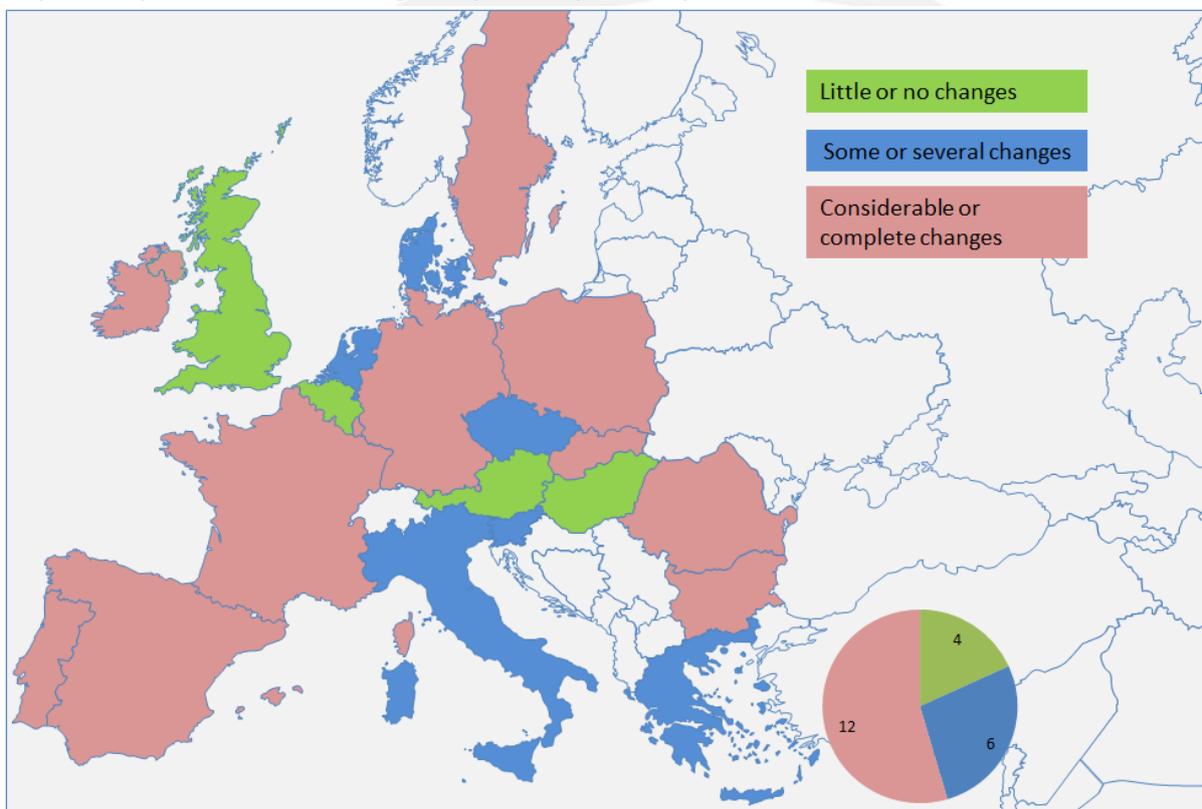
4.2. Operational balancing

Shippers must be able to balance their portfolios through trading of short-term standardised products (STSPs) which are traded at least at day-ahead and during the day either on a physical basis or through title trade. The creation of STSPs facilitates the trading process for shippers who operate on different national markets. The BAL NC outlines rules for the transactions at trading platforms that can provide sufficient support for shippers to trade and for TSOs to procure gas when undertaking balancing actions.

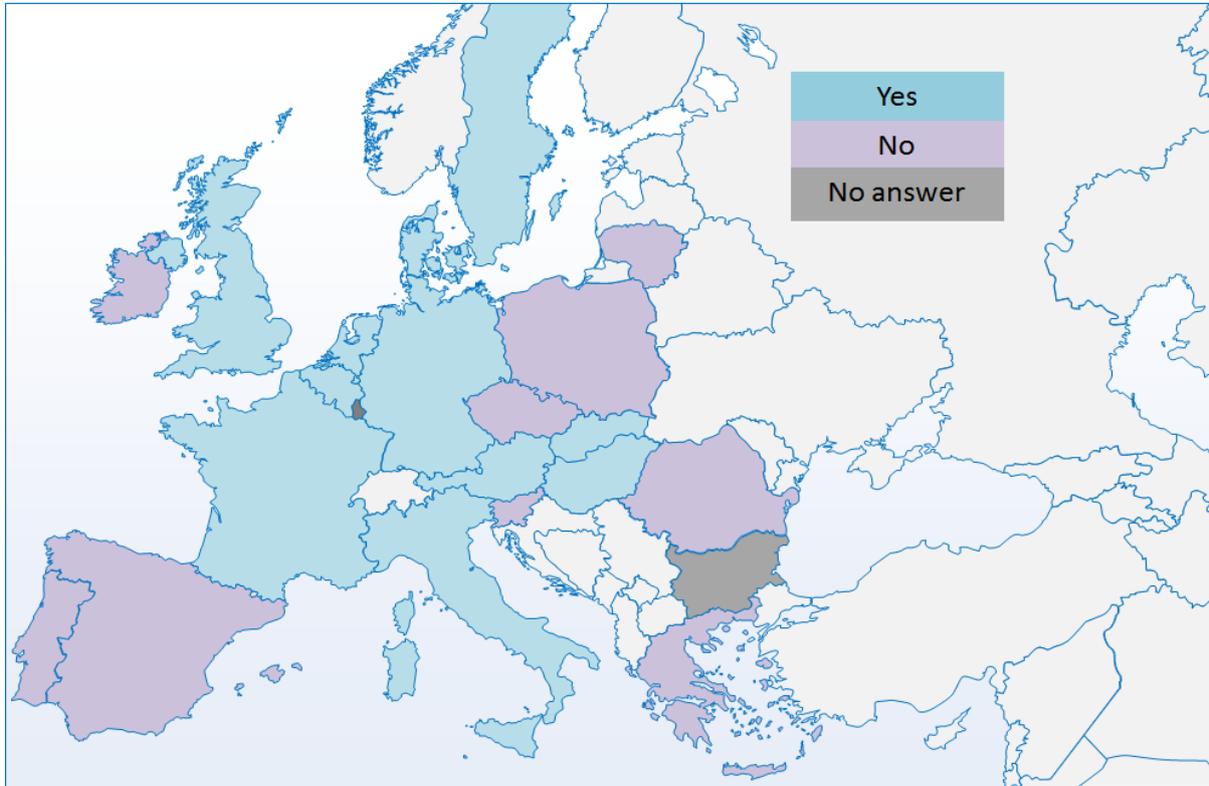
As it can be observed from map 3.a. more than half of the respondents expect considerable or complete changes when implementing this chapter of the BAL NC. Although products similar to the STSPs are already available in some countries in Europe (see map 3.b.) many respondents also remarked that such products are not yet offered in their network. These countries may therefore need to define and establish such products where they are necessary to support the TSO in its residual balancing role. In addition, some respondents

stated that their systems do not currently have any trading platforms where the trading of STSPs could take place. Even some countries with well-developed liquid markets that already offer some STSPs through trading platforms also consider these provisions to be challenging. For these countries, new publication obligations for the TSOs and the reduced use of balancing services would require considerable changes in current processes.

Map 3.a: Operational Balancing - response by country



Map 3.b: TSO use of Short Term Standardised Products in Europe



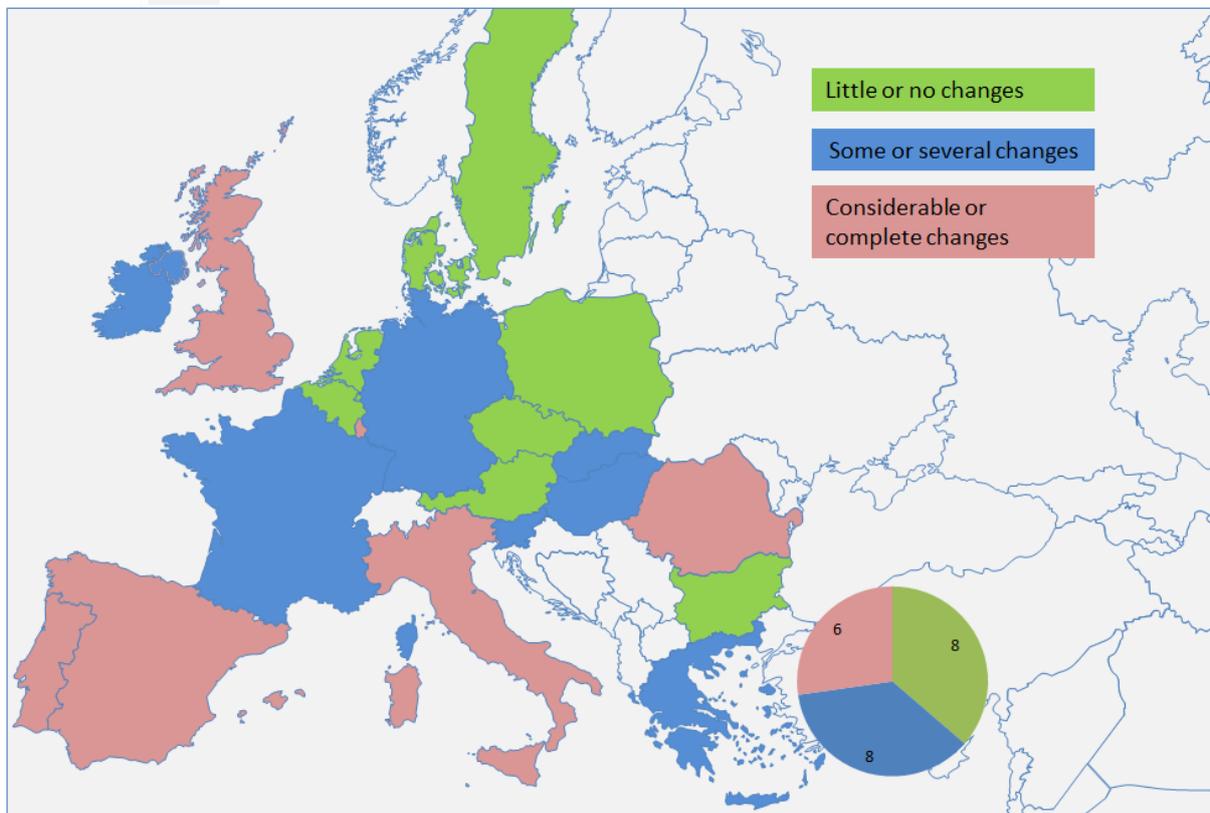
Source: European Commission (DG ENER) questionnaire on gas balancing arrangements.

4.3. Nominations

The BAL NC sets out basic nomination and re-nomination rules for shippers and TSOs to follow when nominating and re-nominating gas quantities at Interconnection Points.

The countries that only foresee little or no challenges refer to minor changes in the matching procedure and the nomination and confirmation timelines. The change of gas day and the harmonised usage of KWh are equally features that will require some adaptation. The countries that expect considerable changes indicate that the new provisions will require a redesign of current nomination processes such as a continuous re-nomination cycle and the need for extensive coordination with adjacent TSOs. Map 4 below show a significant difference in terms of challenges foreseen by the countries when implementing the (re-)nomination rules throughout Europe.

Map 4: Nominations - response by country

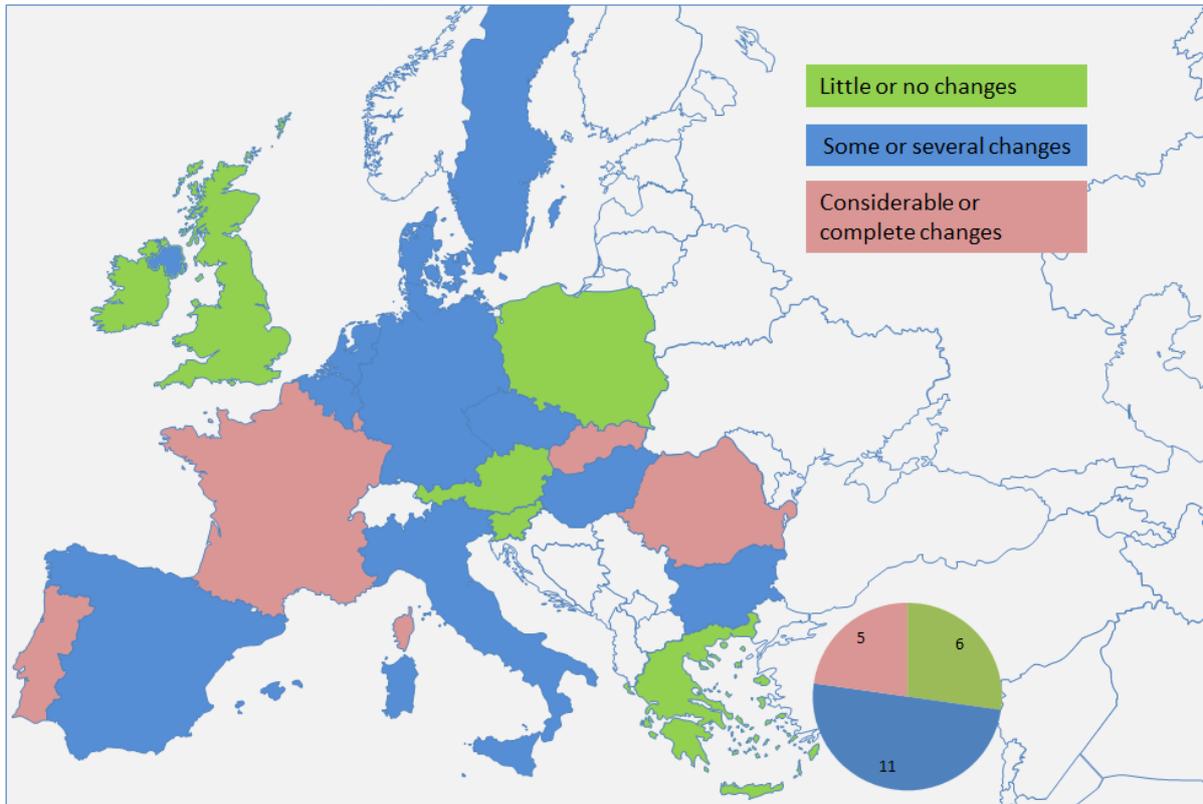


4.4. Daily imbalance charges

The main purpose of the daily imbalance charge mechanism is to incentivise shippers to balance their inputs and offtakes. The objective is to induce shippers to trade to be as close to a balanced position as possible in order to limit their individual exposure to a daily imbalance charge. This means that when a shipper's offtakes exceeds its inputs for a specific gas day, then the financial effect is equal to purchasing the gas from the TSO at a price that is above the weighted-average price of gas on the gas day (marginal buy price). Equally, if their inputs exceed their offtakes, then the financial effect is equivalent to the shippers selling this gas to the TSO at a price below the weighted average price of gas on the day (marginal sell price). Thus the prices provide an incentive to achieve a small daily imbalance quantity.

Map 5 shows that the majority of countries anticipate at least some or several changes to their current systems when introducing the new daily imbalance charge methodology. Some of the respondents highlight the fact that NRAs will approve the daily imbalance charge calculation methodology based on a proposition by the TSOs. According to some respondents this could increase the publication obligations of the daily marginal buy and sell prices.

Map 5: Daily Imbalance Charge - response by country

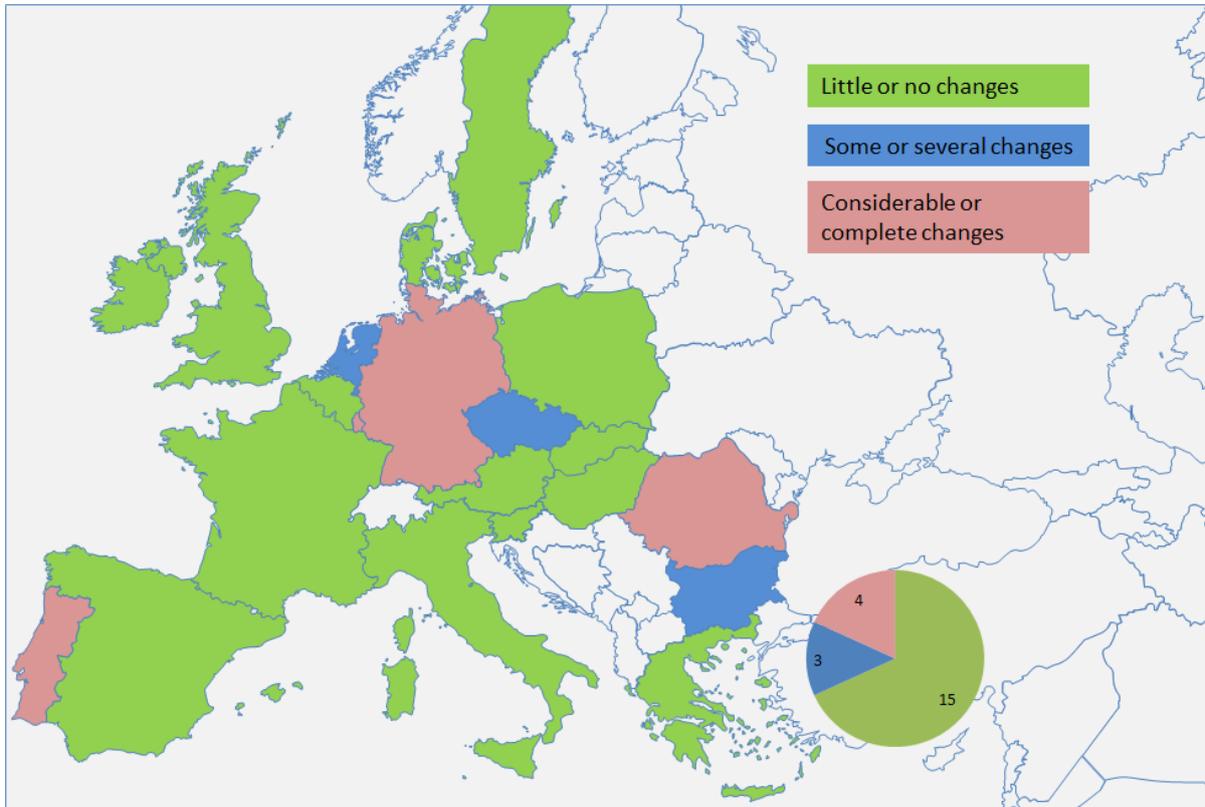


4.5. Within day obligations

Within day obligations (WDOs) are an option which may be necessary to securely operate the network. The BAL NC provides for specific rules and their consequences relating to shippers inputs and off-takes which are derived to ensure flows consistent with those necessary to maintain system integrity during the gas day. The WDOs may comprise either specific obligations or incentive mechanisms on shippers behaviour to minimise the need for balancing actions to keep the system within operational limits during the day.

As illustrated in map 6 the majority of the respondents do not expect considerable changes in respect of WDOs. Where WDOs exist they will be reassessed but some form of WDOs might reasonably be expected to apply and where WDOs are not applied they should not be necessary unless the BAL NC, or other network code implementations, or wider changes in circumstances, cause changed within-day flow patterns which indicate that new WDOs would be required. However some TSOs that already use WDOs anticipate considerable changes due to a major redesign of the current systems.

Map 6: Within Day Obligations - response by country

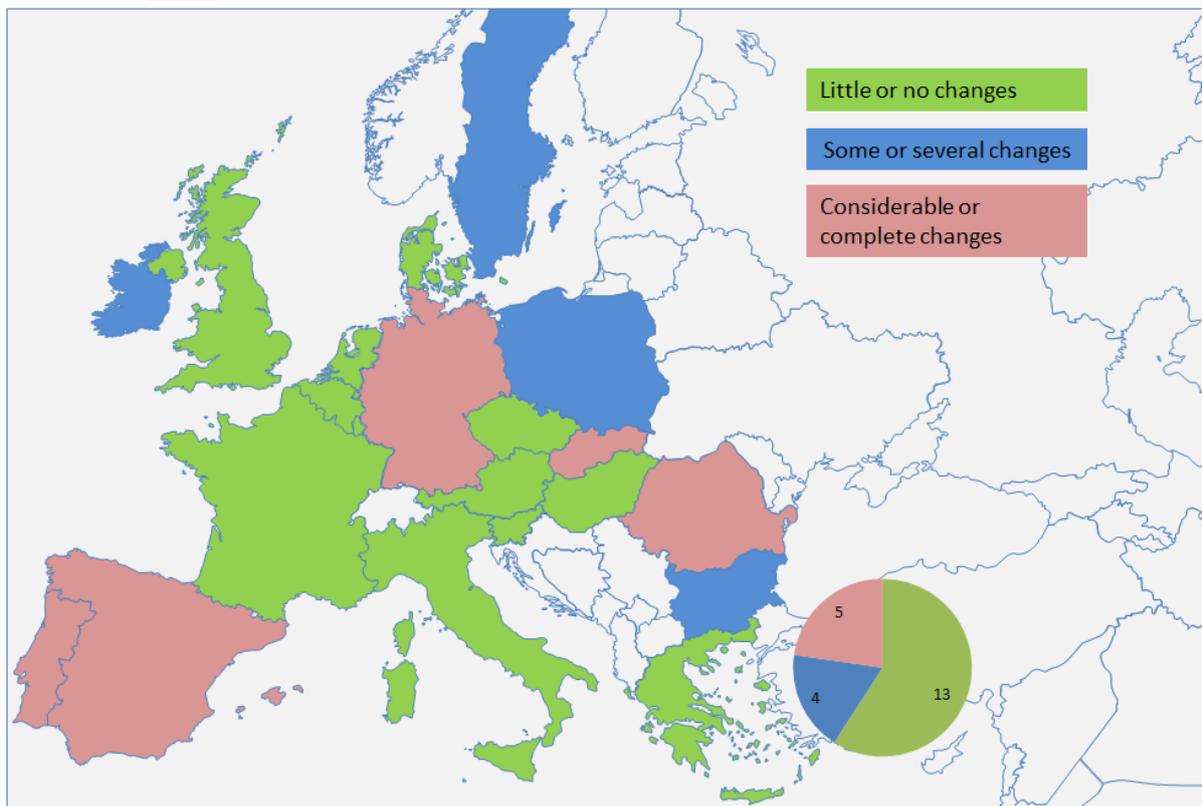


4.6. Neutrality arrangements

As a principle, the BAL NC states that TSOs must remain cash neutral in respect of cash flows arising from its balancing activities. This means that the TSO shall pass any cost or revenues arising from balancing activities to the shippers. The TSO therefore has a settlement role to administer the financial flows associated with the balancing regime.

Map 7 below illustrates that slightly more than half of the TSOs foresee only minor changes or modifications to their current neutrality systems. The respondents indicate that only minor changes are expected when implementing the new neutrality provisions from the BAL NC and some countries already have systems of redistributing costs and revenues. Those who expect several or considerable changes either need to make significant changes to the current neutrality system or who have no prior experience with neutrality arrangements. One country also foresees considerable changes due to a change in the current national neutrality arrangement from a one pot system to a split pot system where costs should be more accurately targeted to shippers.

Map 7: Neutrality - response by country



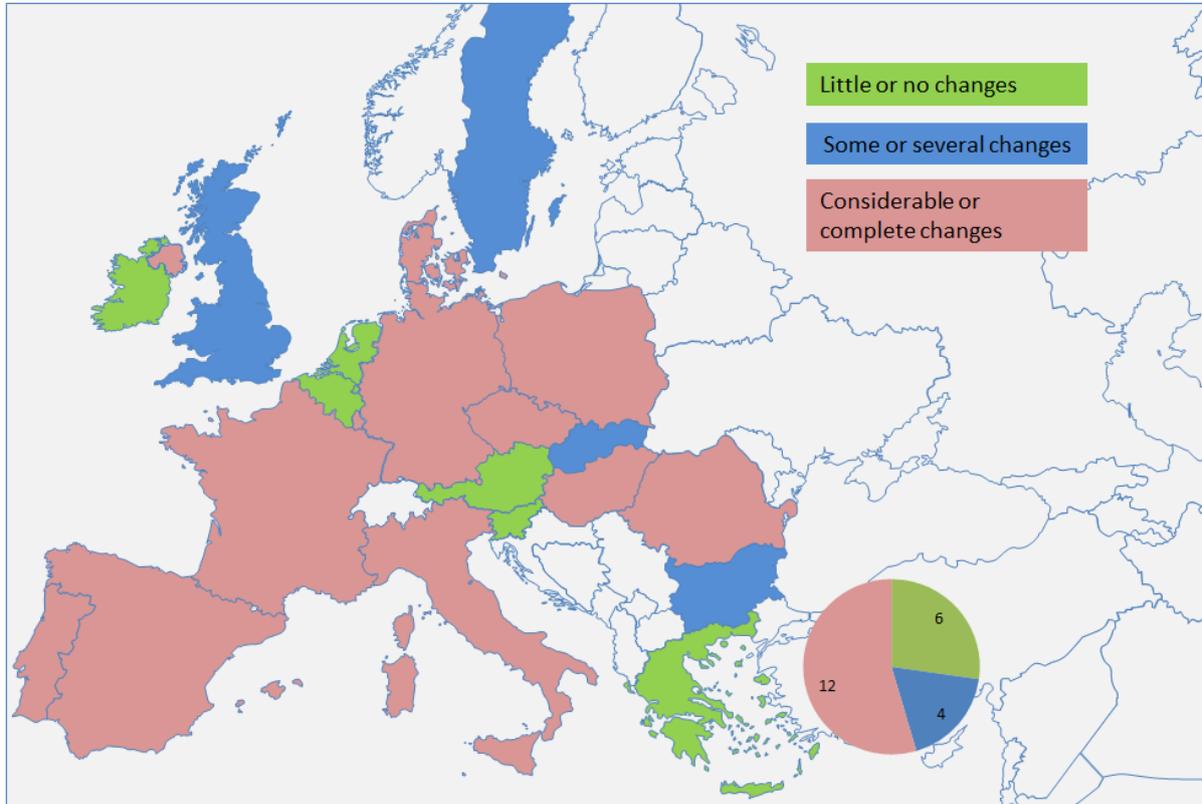
Note: TIGF has indicated some or several changes when responding to this question.

4.7. Information provision

The BAL NC outlines a number of provisions regarding the information that the TSO shall provide to shippers during the gas day. These requirements cover Non Daily Metered Offtakes (NDM), Intraday Daily Metered Offtakes (IDM), and Daily Metered offtakes (DM). Each balancing zone must apply one of three information provision models: Base case, variant 1 and variant 2. The base case model obliges the TSO to provide detailed forecast of off-takes volumes for NDM customers day-ahead and at least twice within each gas day. The variant 1 model covers systems where the information is not an end-of day quantity but an allocation for the past hours of the current gas day for not only NDM but also for DM. Variant 2 refers to a model that provides a day-ahead forecast to shippers for NDM customers and where no further updates need to be provided if the shippers are able to fulfil their balancing obligations with information provided on the day before, being used to determine relevant offtakes for imbalance calculation purposes.

The majority of the respondents expect considerable changes to accommodate the new information provisions. The new changes will require significant IT investments but also extensive cooperation with DSOs, shippers and NRAs. The new forecast methodology and the responsibilities must be defined and the current IT systems and metering changes must be adapted. In some cases WDOs determine the characteristics of information provision. Where few changes to current information provision systems are expected, the BAL NC provisions are similar to the current arrangements for providing information to shippers. Map 8 show that most countries will need to introduce significant changes to their current systems in order to comply with the information provision requirements in the BAL NC.

Map 8: Information Provision - response by country



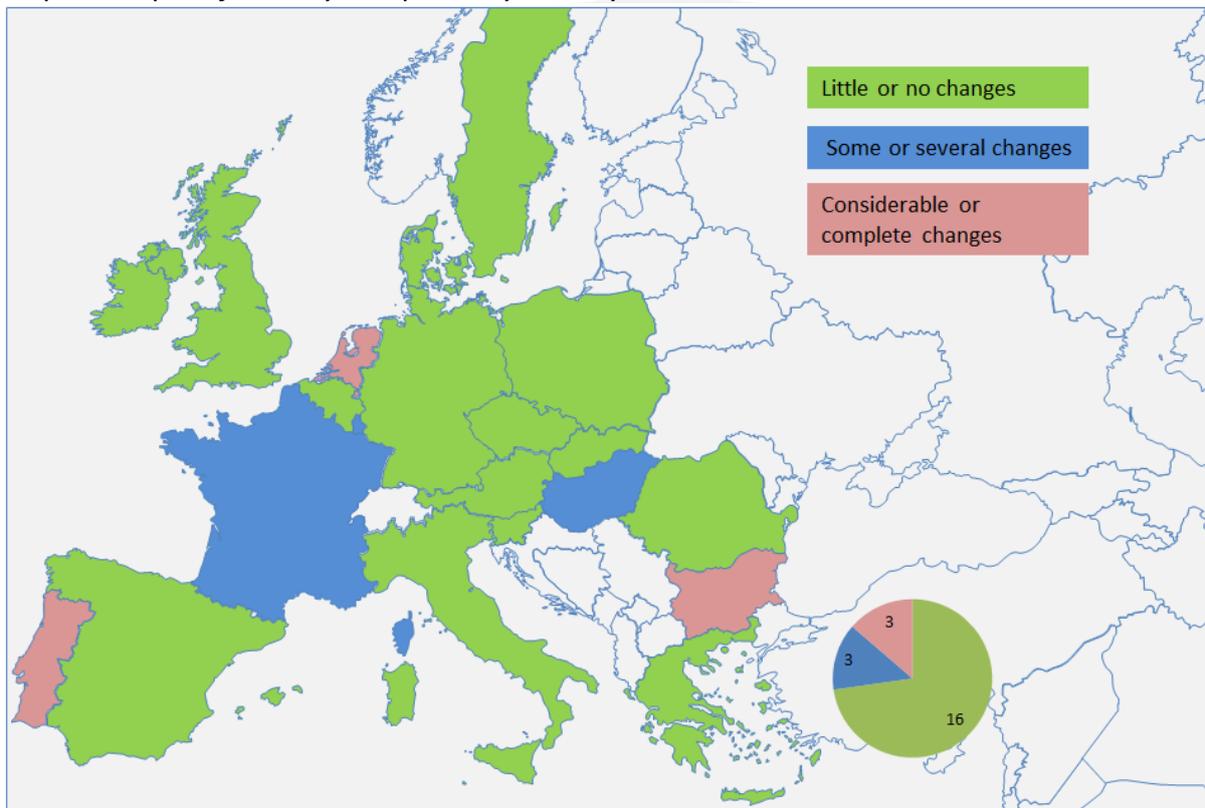
4.8. Linepack flexibility service

The BAL NC provides the possibility to offer a linepack flexibility service to shippers on condition that the main terms and conditions are approved by the NRA. This service shall be consistent with the responsibility of the shippers to balance their inputs and off-takes throughout the gas day. The explicit use of linepack flexibility signifies that a shipper can use the service simply by informing the TSO. If the shipper notifies an entry into the linepack service this will be considered to be an exit allocation for balancing purposes. An exit out of the linepack service will be considered an entry allocation for balancing purposes. The implicit use of linepack flexibility means that the shipper is allocated entries to and exits from the linepack flexibility service based on an agreed allocation mechanism between the TSO and the shipper and the shippers' imbalance at the end of the day.

Since a large number of countries do not provide linepack service and do not foresee using it in the future these provisions would not cause any major changes for them as illustrated in

map 9. Only TSOs who consider introducing these provisions expect some or several changes to the current system. The map clearly indicate that the majority of the TSOs envisage few changes with regards to linepack flexibility service provision. Countries who do anticipate implementation of this service foresee major changes in their systems.

Map 9: Linepack flexibility - response by country



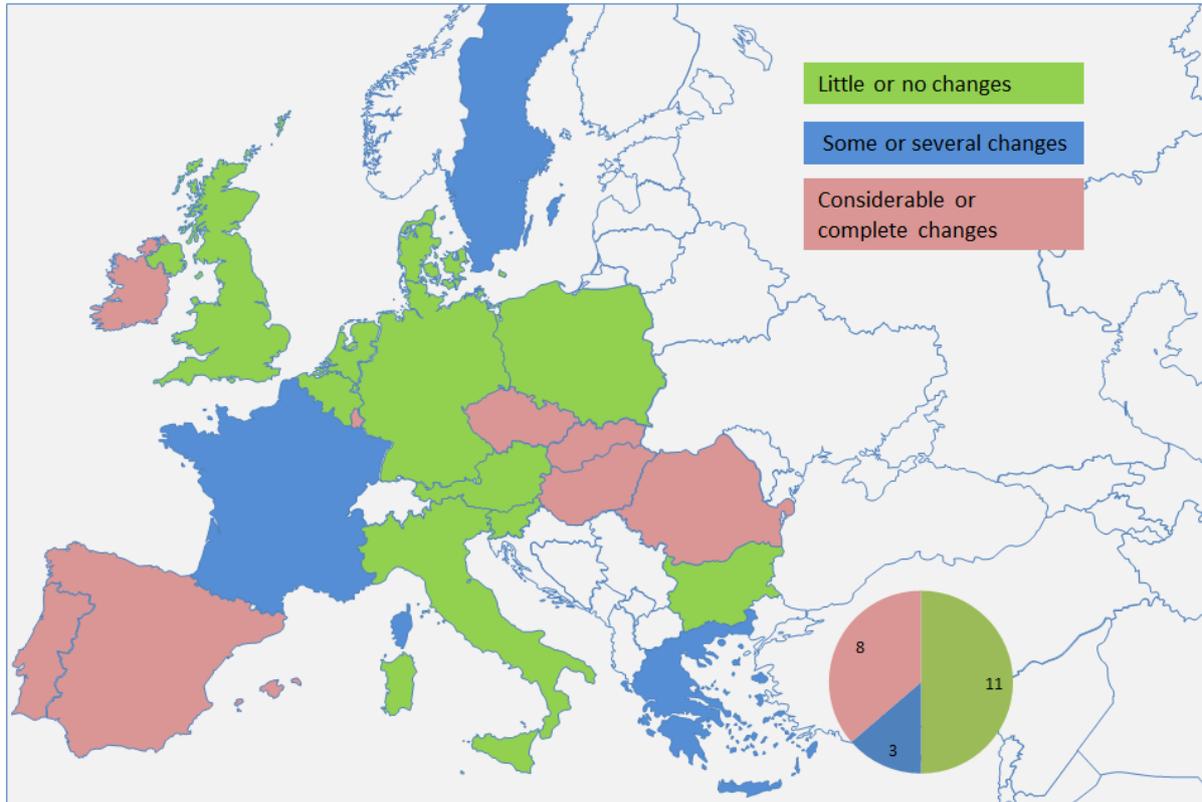
Note: TIGF has indicated little or no changes when responding this question.

4.9. Interim measures

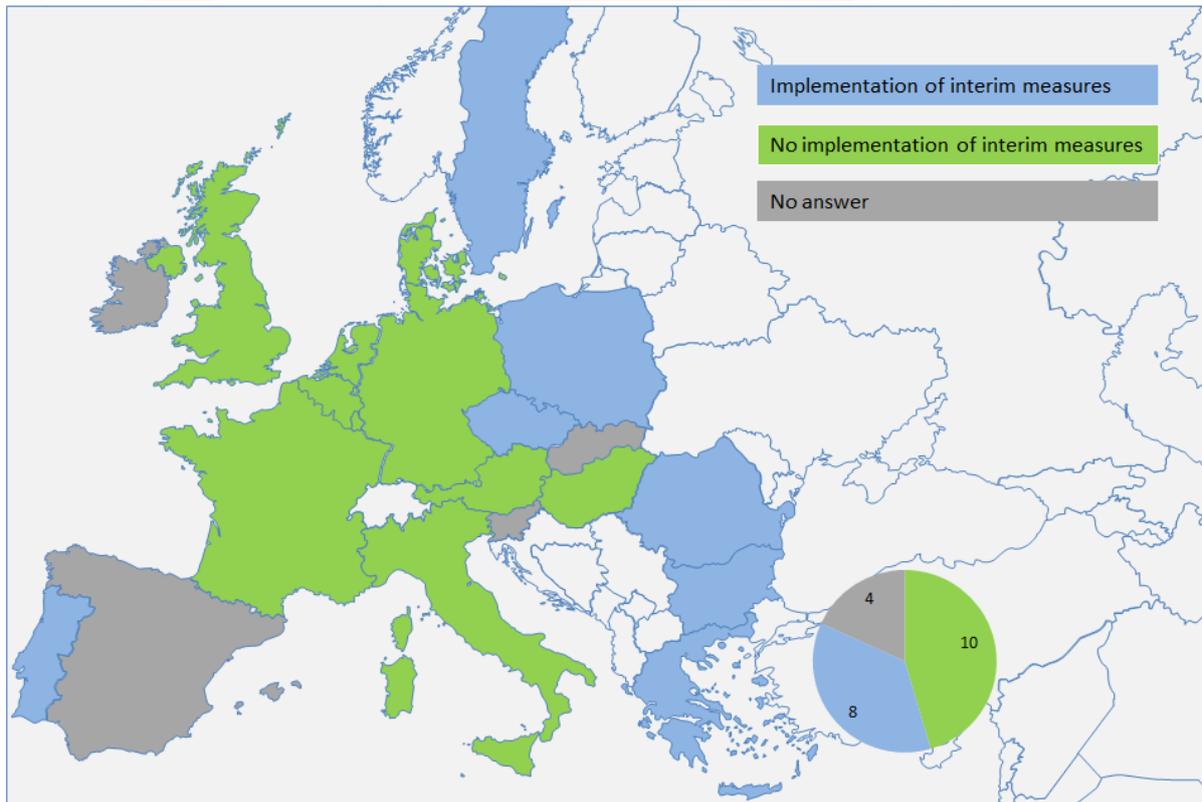
The BAL NC states that interim measures can be applied in order to develop a more liquid and competitive short term market. These intermediate steps can consist of establishing a balancing platform and apply tolerances in order to reduce shipper's financial exposure with regards to the daily imbalance quantity for the gas day.. The BAL NC enables, subject to NRA approval, other approaches provided these do not undermine other features of the enduring balancing regime defined in the code. Implementation of the interim measures shall be accompanied by an annual report submitted to the NRA outlining the reasons for the application of the interim measures and the potential continued usage of these.

More than half of the respondents stated that an implementation of interim measures is not planned. For those who plan to implement interim measures the majority referred to both balancing platform and tolerances to be applied as intermediate steps towards implementing all of the BAL NC. Considerable changes are expected in countries with low market liquidity where new features including new platforms would be needed to fulfil the requirements of the BAL NC. Map 10.a. indicates the implementation challenge of interim measures which shows that more than half of the countries don't expect major efforts, whereas the other half foresees at least some or considerable changes. Map 10.b. points out that approximately a third of all the countries are going to implement interim measures. Map 10 indicates that most of the countries who contemplate implementing interim measures are in either Southern Europe or Eastern Europe. Countries that have replied "no answer" to this question indicate that no final decision has been taken regarding this issue.

Map 10.a: Interim Measures (level of implementation difficulty) - response by category



Map 10: Interim Measures expected implementation - response by country



4.10. Release of surplus flexibility

The BAL NC states that TSOs shall aim to reduce the amounts of long term flexibility contracts that provides the TSO with a right to offtake or input specified volumes of gas into or off the network. The BAL NC also provides for stakeholders to be consulted on the release mechanism of such flexibility contracts and that the NRA may set targets for the proportion by which the long term contracts should be reduced in order to increase the liquidity in the short term market.

All but one respondent answered either “no” or did not provide an answer to the question of whether there were still long term flexibility contract with either shippers or infrastructure providers providing balancing gas in their systems. Most countries therefore indicated that their contracts with either shippers or infrastructure are for one year or shorter. Map 11 shows that only one country (Slovenia) has a flexibility contract for more than one year.

Map 11: Surplus flexibility release - response by country

