
SUPPORTING DOCUMENT FOR THE NETWORK CODE ON ELECTRICITY BALANCING

23 December 2013

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1 PURPOSE AND OBJECTIVES OF THIS DOCUMENT

1.1 PURPOSE AND SCOPE OF THE DOCUMENT

This document has been developed by the European Network of Transmission System Operators for Electricity (ENTSO-E) to accompany the Network Code on Electricity Balancing (NC EB) and should be read in conjunction with that document.

The document has been developed in recognition of the fact that the NC EB, which will become a legally binding document after the Comitology process, inevitably cannot provide the level of explanation which some parties may desire. Therefore, this document aims to provide interested parties with the background information and explanation for the requirements specified in the NC EB, and outlines the steps that follow.

1.2 STRUCTURE OF THE DOCUMENT

The supporting document is structured within the framework for all market related Network Codes supporting documents as follows:

- Section 1** Purpose and Objectives.
- Section 2** Procedural Aspects – introduces the legal framework within which the market-related Network Codes have been developed, as well as the next steps in the process.
- Section 3** Added value of the NC EB – describes how the NC EB adds value to the harmonised, coordinated Balancing Market across Europe.
- Section 4** Scope, Structure and Approach to Drafting of the Network Codes – explains the approach, which ENTSO-E has taken to develop the Network Codes, outlines some of the challenges and opportunities ahead of System Operation as well as concepts used in the NC EB.
- Section 5** Relationship between NC EB and Framework Guidelines – explains the relationship between the NC EB and the Framework Guidelines on Electricity Balancing (FG EB).
- Section 6** NC EB: Objectives, Requirements – focuses on the objectives of the NC EB by topic, and on an Article by Article basis, split into the three main parts of the NC EB, procurement, settlement and capacity reservation, identifying the roles, responsibilities, functions and characteristics of the respective sections. Choices that have been made within the NC EB are justified in this section.
- Section 7** Summary of the public consultation – summarises the main comments received from stakeholders through the public consultation process and highlights the main changes to the NC EB
- Section 8** Next steps – describes the timescales going forward including the procedure for submission of the NC EB to ACER and the Comitology process,
- Section 9** Literature & Links – Links to relevant documents.
- Section 10** Appendix – provides a high level implementation timeline and summarises comments received on V1.22 29 May 2013 of the NC EB (public consultation version) the ENTSO-E drafting team's responses to those comments.

1.3 LEGAL STATUS OF THE DOCUMENT

This document accompanies the NC EB, but is provided for information only and therefore it has no binding legal status.

1.4 THE CONSULTATION PROCESS

The public consultation on the draft NC EB launched on 17 June 2013 and closed on 16 August 2013. In total 2178 stakeholder comments from more than 40 stakeholders were received electronically via the ENTSO-E consultation tool. The number of comments on each chapter is as follows:

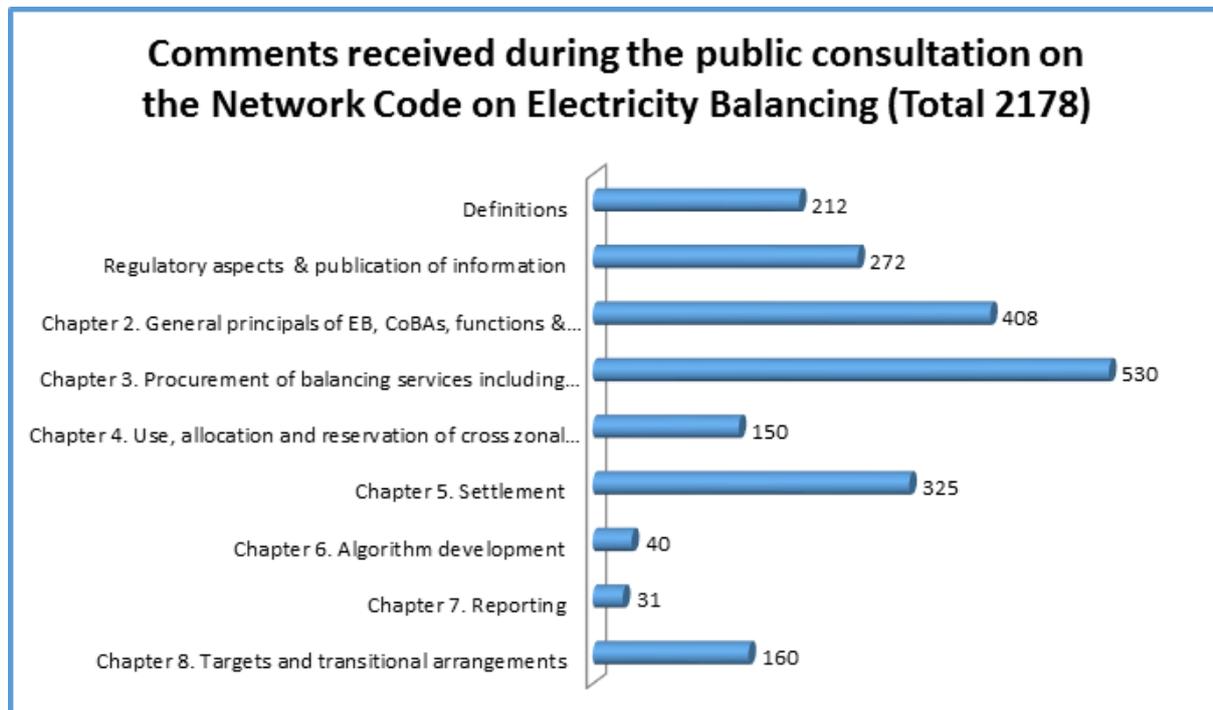


Figure 1: Public consultation comments on the NC EB

The overview of outcome of the public consultation can be found in Section 7 of the supporting document. Further details are provided in the Appendix 10.2 of the supporting document “Detailed Analysis of Responses” including a high level summary of comments received on each article and an explanation on if and how they have been taken into account.

2 PROCEDURAL ASPECTS

2.1 INTRODUCTION

This section provides an overview of the procedural aspects of the Network Codes’ development. It explains the legal framework within which Network Codes are developed and focuses on ENTSO-E’s legally defined roles and responsibilities. It also explains the next steps in the process of developing the NC EB.

2.2 THE FRAMEWORK FOR DEVELOPING NETWORK CODES

The NC EB has been developed in accordance with the process established within the Third Energy Package, in particular in Regulation (EC) 714/2009. The Third Package legislation establishes ENTSO-

E and the Agency for the Cooperation of Energy Regulators (ACER) and gives them clear obligations in developing Network Codes. This is shown in Figure 2.

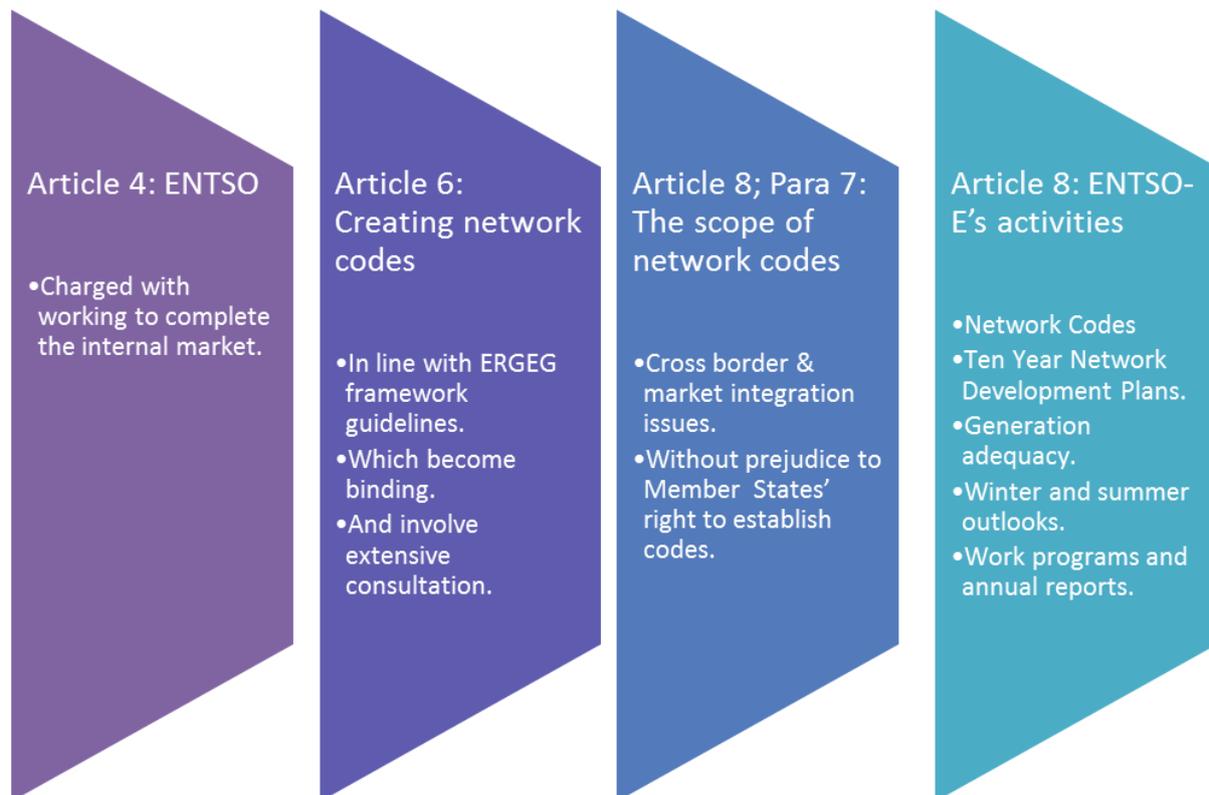
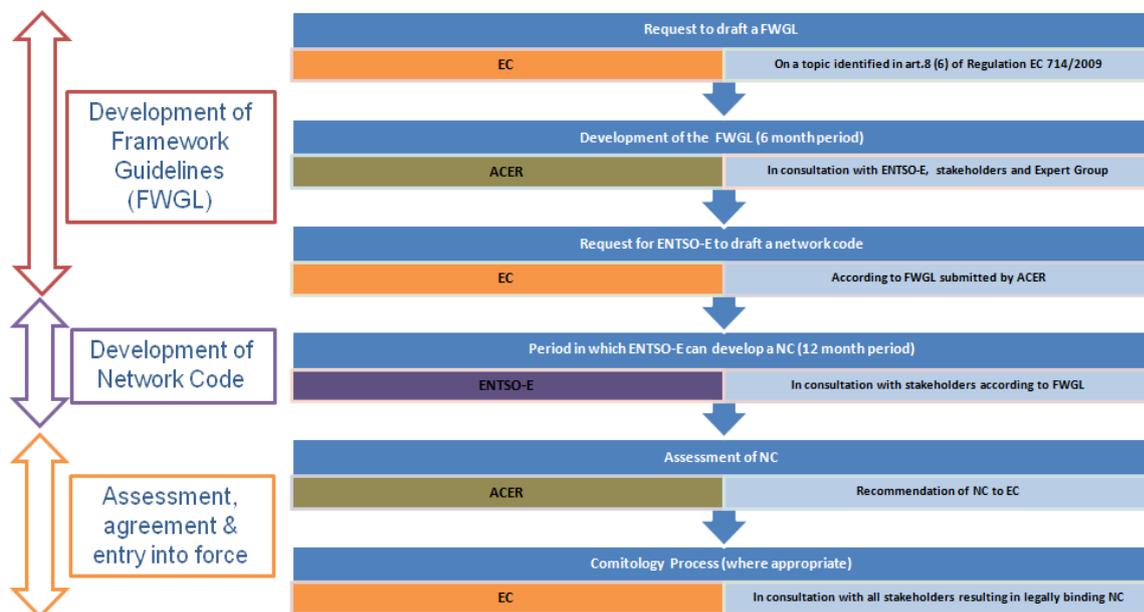


Figure 2: ENT SO-E's legal role in Network Code development according to Regulation (EC) 714/2009.

Moreover, Regulation (EC) 714/2009 creates a process for developing Network Codes involving ACER, ENT SO-E and the European Commission, as shown in Figure 3 below.



....through a collaborative process

Figure 3: Network Codes' Development Process

The NC EB has been developed by ENTSO-E to meet the requirements of the Framework Guidelines on Electricity Balancing published by ACER on 18 September 2012. ACER also conducted an Initial Impact Assessment associated with its consultation on its draft FG EB in September 2012.

ENTSO-E was formally requested by the European Commission to begin the development of the NC EB on 1 January 2013. The deadline for the delivery of the NC EB to ACER is 1 January 2014.

2.3 NEXT STEPS IN THE PROCESS

Following agreement and approval within ENTSO-E, the NC EB will be submitted to ACER in line with the defined deadline of 1 January 2014.

ACER is then expected to assess the NC EB to ensure it complies with the FG EB and will make a recommendation to the European Commission. When the European Commission agrees with the ACER recommendation, the European Commission can conduct the Comitology process which will eventually transform the NC EB into a legally binding integral component of the Regulation (EC) 714/2009.

3 ADDED VALUE OF THE NC EB

The targets and methods to foster Balancing Market integration as set forth in the FG EB aim to reduce total costs and to increase Social Welfare while ensuring Operational Security.

In a recent Impact Assessment, commissioned by the European Commission, it has been assessed that reasonable benefits by integrating Balancing Markets can be gained. Nevertheless, it also needs to be pointed out that compared to the other electricity market timeframes the Balancing Markets represent only 2-3% of the total turnover volume of wholesale markets. Hence, the potential cost saving of integrating Balancing Markets can be considered to be relatively small. As the Balancing Services are the last resort action for TSOs to ensure Operational Security, the most important objective in developing integrated Balancing Markets is to keep the lights on while facilitating market integration.

While the integration of the European energy markets apart from Balancing is following rather clear target models, as is the case for example in capacity allocation set out in the Network Codes on Capacity Allocation and Congestion Management (NC CACM) and Forward Capacity Allocation (NC FCA), clear target models for the different kinds of Balancing Services have not been detailed. Hence, rather than detailing such target models, the NC EB lays out the processes to develop and implement the steps towards realising these efficiency gains while maintaining Operational Security. TSOs have to develop models for market-based cooperation, first on regional level and later on European level pursuant to the deadlines defined in the NC EB.

The NC EB provides for a phased approach to foster cooperation amongst TSOs in various areas of Balancing. The key concept of Coordinated Balancing Areas (CoBAs) is introduced in the NC EB which establishes a flexible obligation for cooperation to ensure a swift transition towards the relevant target. The NC EB provides a foundation for a coordinated set of Balancing rules, incorporating the benefit of learning from experience, en route towards a regional or pan-European Balancing Market.

The NC EB creates a level-playing field for all potential providers of Balancing Services, including Demand Side Response, energy storage and intermittent sources. The harmonised processes and the use of Standard Products form a framework for providers to offer Balancing Services to regional or pan-European Balancing Markets based on TSO-TSO cooperation. As a result of the implementation of the NC EB, there will be more providers as the arrangements will be more inclusive which will create a larger and more liquid Balancing Market; as a result the end consumers will benefit from any cost savings which will be achieved.

4 SCOPE, STRUCTURE AND APPROACH TO DRAFTING THE NC EB

4.1 BACKGROUND AND SCOPE

The NC EB specifically covers the areas of the Electricity Regulation 714/2009 referred to in Article 8(6)(h) and (j), principally the rules for commercial and operational provision of system Balancing and the Balancing rules including network-related power reserve rules, with the objective of contributing to non-discrimination, effective competition, completion and efficient functioning of the internal market in electricity and cross-border trade, security of supply, providing benefits for customers, participation of Demand Side Response, supporting the achievement of the EU's targets for penetration of renewable generation, as well as ensuring the optimal management and coordinated operation of the European electricity transmission network.

4.2 GUIDING PRINCIPLES OF NC EB

The guiding principles of the NC EB are for integration, coordination and harmonisation of the Balancing regimes in order to facilitate electricity trade within the EU in compliance with the Electricity Regulation (EC) 714/2009 and Directive 2009/72/EC. These principles are essential for the Transmission System Operators (TSOs) both within and across Synchronous Areas to efficiently manage their responsibilities and provide Balancing tools in the most efficient and coordinated way.

System Balancing is a highly complex task, which requires TSOs to take actions to ensure that electricity demand and supply are equal in real-time in order to preserve the Operational Security of the system. In an integrated cross-border Balancing Market, TSOs balance the system in a coordinated way in order to use the most efficient Balancing resources, taking into account Operational Security limits both within and across Synchronous Areas. As such, the main goal of the NC EB is to achieve a harmonised and coordinated set of procurement, capacity reservation and settlement rules.

Taking into account the very different Balancing Market designs that exist today and the lack of consensus on the common Balancing Market, regional integration provides an opportunity to gain experience on the route towards pan-European integration. The progressive steps of developing regional Balancing Markets should be achieved quicker than a leap to developing a single solution.

ENTSO-E considers that the NC EB should set out an incremental, regional based, approach in the development of a European Balancing Market, taking into account the timeline defined in the FG EB.

Consistent with the FG EB, the NC EB defines the high level principles of the models that are subject to TSOs proposals after the NC EB comes into force (e.g. pricing method, Balancing Energy products, European integration model for Frequency Restoration Reserves with automatic activation). For the purpose of the development of the European Balancing Market, the NC EB foresees the coordination of Balancing activities initially on a regional level moving towards a European level. The NC EB foresees a process for progressive development of the European Balancing Market where market efficiency and System Security issues are considered and in compliance with relevant Network Codes and the intentions in the FG EB. ENTSO-E has considered that the harmonisation of Balancing Markets is not a target in itself, but rather that progressive harmonisation should be pursued in areas where it continues to provide benefits to customers and power System Security. This is illustrated in the NC EB's approach to cross-border issues, through the use of the CoBA within which the Common Merit Order concept will apply, to foster the ambitious targets of market integration as set forth by FG EB.

4.3 BACKGROUND TO NC EB

The structure of the NC EB is based on the three major sections of the FG EB namely:

- (1) Procurement of Balancing Services,
- (2) Reservation and use of Cross Zonal Capacity for Balancing, and
- (3) Imbalance Settlement.

In Balancing, the TSOs need to ensure that they will always be able to activate a sufficient amount of energy to balance the deviations between supply and demand in real-time. This defines the concept of “Balancing Energy”, which is provided by the Balancing Service Providers (BSPs) that are able to meet the necessary technical requirements to deliver this service. Balancing can be provided by a wide range of technologies including small-scale generation, energy storage, Demand Side Response, renewables resources and intermittent resources. In general the NC EB does not refer to any technology type and therefore provides opportunities for all potential sources of Balancing which fosters competition and thus maximises the Social Welfare gain. The NC EB is guided by the notion that actions, like participation or initiative for cooperation, which are not explicitly forbidden by the NC EB are allowed.

As TSOs are faced with the risk that they will not have enough offers for Balancing Energy from BSPs in real-time, they hedge this uncertainty by securing in advance a sufficient amount of Balancing Capacity available in their Responsibility Area.

An option which gives the TSOs the possibility to activate the certain amount of Balancing Energy within a certain timeframe is referred to as “Reserve Capacity”. It is typically defined as the available generation or demand capacity which can be activated either automatically or manually to balance the system in real-time. Balancing Capacity, as used in the NC EB, refers to the contracted part of the Reserve Capacity.

The Balancing Energy in real-time can thus be provided by the Balancing resources, which were secured in advance as Balancing Capacity, or by other Balancing resources that can offer Balancing Energy based on their availability in real-time.

4.3.1 Procurement and Types of Reserve (Chapter 3 NC EB)

In order to deal with disturbances, system operation involves three types of Balancing Capacity which are part of a sequential process based on successive layers of control. These are shown schematically in Figure 4:

1. Frequency Containment Reserves (FCR);
2. Frequency Restoration Reserves (FRR); and
3. Replacement Reserves (RR).

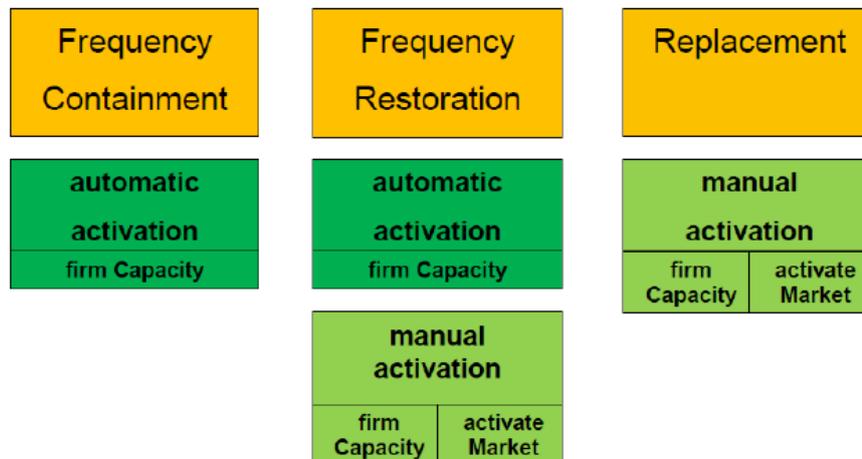


Figure 4: Three Types of Reserves and Sourcing

The FG EB requires a standardisation of Balancing products. To this end, the NC EB lists the standard characteristics as a minimum set of features which define Balancing Capacity and Balancing Energy products.

All TSOs will prepare a common proposal for Standard Products for Balancing Capacity and Standard Products for Balancing Energy which includes specifications of their characteristics that may be more precise than the minimum laid out in NC EB.

The NC EB also outlines a process to define, review and update the list of Standard Products, which includes a public consultation with stakeholders. The process foresees that this proposal from all TSOs is submitted to all National Regulatory Authorities (NRAs) and to ACER no later than one year after the NC EB comes into force.

The standard characteristics are the minimum set of product attributes that would allow for its exchange through a Common Merit Order List. Standard characteristics should seek to minimise the number of Common Merit Order Lists so as to maximise the liquidity of Balancing Markets. In other words, it could be somehow possible to exchange, through a Common Merit Order List, products that are not fully harmonised provided these products are able to meet the minimum standard characteristics. Further details on the characteristics of Standard Products are shown in Section 6.

4.3.2 Cross Zonal Capacity for Balancing Services (Chapter 4 NC EB)

To ensure the availability of Balancing Services procured outside the domestic Responsibility Area, TSOs require the ability to reserve capacity on Interconnectors. Cross Zonal Capacity is limited and capacity will be allocated through the guidance set-out in NC FCA and NC CACM. It is considered that there is room for improving competition by means of cross-border Balancing exchanges. TSOs are permitted under the FG EB to use Cross Zonal Capacity if the socioeconomic benefits are proven. This section of the NC EB deals with the methodologies by which provisions of Cross Zonal Capacity may be implemented, and the principles associated with this.

4.3.3 Settlement Rules and Imbalance Responsibility (Chapter 5 NC EB)

In a liberalised market, the market players have an implicit responsibility to balance the system through the balance responsibility of Market Participants, the so called “Balance Responsible Parties” or BRPs.

In this respect, the BRPs are financially responsible for keeping their own Position (sum of their injections, withdrawals and trades) balanced over a given timeframe – the Imbalance Settlement Period. The remaining short and long energy Positions in real-time are described as the BRPs’ negative and positive Imbalances respectively.

Depending on the state of the system, an Imbalance charge is imposed per Imbalance Settlement Period on the BRPs that are not in balance. This defines the Imbalance Settlement which is a core element of Balancing Markets. It typically aims at recovering the costs of Balancing the system and may include incentives for the market to reduce Imbalances – e.g. with references to the wholesale market design – while transferring the financial risk of Imbalances to BRPs.

The NC EB describes the general objectives of Imbalance Settlement, and defines Imbalance Settlement rules that support competition among Market Participants by creating a level-playing field without discrimination. In respect of the Imbalance Settlement Period, a Cost-Benefit Analysis shall demonstrate whether harmonisation is beneficial and how best to achieve it. Regarding Imbalance pricing, the NC EB describes marginal pricing as the preferred methodology, unless a different pricing method is proven to be more efficient in the long run. In the marginal pricing scheme it is only possible to apply a single or double pricing mechanism, the choice of which is correlated to the length of the Imbalance Settlement Period:

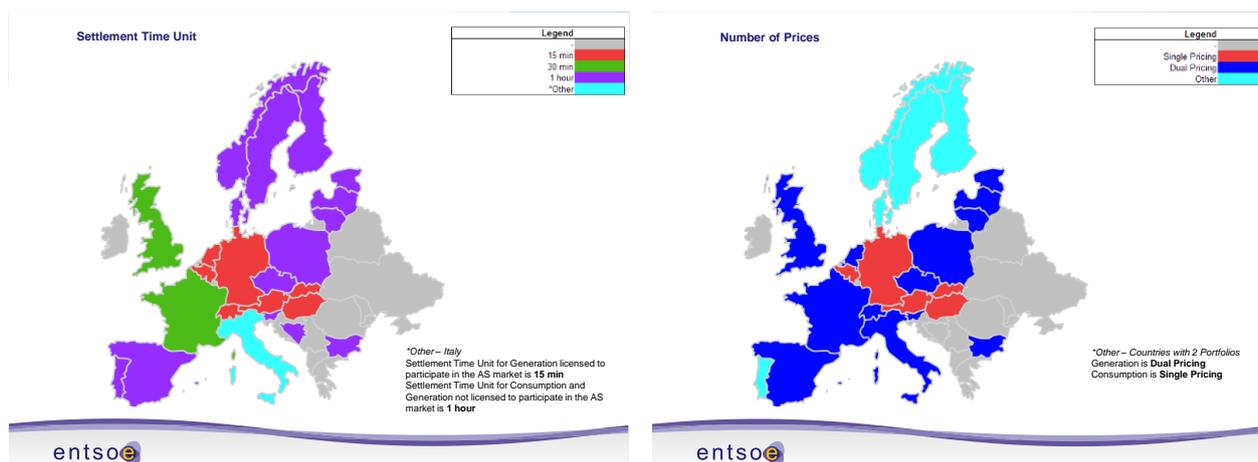


Figure 5: Settlement Time Units and Number of Prices

With regard to Cross Zonal Capacity management, it is to be expected that, within uncongested areas using a pay-as-cleared pricing mechanism, the Imbalance Prices will equalise (product dependent). As consequence BRPs might tend to balance themselves out over the uncongested area and not per Responsibility Area or Scheduling Area. A pay-as-cleared price will reflect the highest activation price for the uncongested area and not for the Responsibility Area or Scheduling Area. As a consequence the Imbalance Prices of Responsibility Area or Scheduling Area does not necessarily reflect the Imbalance situation of the Responsibility Area or Scheduling Area.

For Specific Products for Balancing for which there is no requirement to be offered within the Common Merit Order List no harmonisation is required. The NC EB stipulates that all activated Balancing Energy on the Common Merit Order List will be delivered in a firm way to the borders. Each TSO should decide on their own in conjunction with the provisions within the NC EB whether additional incentives are required to make sure that the requested Balancing Energy situated in its Responsibility Area is correctly delivered by the BSP. There will be various CoBAs, the procurement processes might differ between

them and may be applied in several ways. The NC EB does not stipulate a harmonisation of the settlement rules/process across CoBAs.

4.4 LEVEL OF DETAIL

The NC EB describes the principles and rules by which a harmonised and coordinated European Balancing Market can be developed. The timescales within which the NC EB has to be drafted do not permit the necessary analysis and cooperation required for the NC EB to specify exact details on, for example, Standard Products, or the implementation strategy for Automatic FRR. These details, consistent with the FG EB, are referred to TSO groupings that will be organised by ENTSO-E after the NC EB comes into force.

The NC EB provides minimum standards, principles and requirements related to Electricity Balancing. The level of detail matches the purpose of the NC EB: harmonising Balancing arrangements, methodologies for coordination, roles and responsibilities of TSOs, BSPs and BRPs as well as to enable and ensure adequate exchange of necessary information in order to future proof the system for integrating innovative technologies and sustainable energy sources, operate the system in a safe, secure, effective and efficient manner and applying the same principles and procedures for different systems to establish a wider level-playing field for Market Participants.

In order to achieve the necessary level of European harmonisation, allowing at the same time more detailed provisions at the regional / national level where necessary, and with the view of drafting market-based Network Codes that are open for future developments and new applications, an approach focusing on pan-European view and most widely applicable requirements has been pursued throughout all development phases.

Thus, the requirements have been drafted considering a period from entry into force in 2014/2015 to the outlying requirement of the implementation of the European integration models. Consequently building up a coherent legal mechanism, devising and building the IT systems necessary and appointing the necessary agents for change, with the appropriate balance between level of detail and flexibility, which focuses on what-to-do, not so much how-to-do.

4.5 FIELD OF APPLICABILITY OF THE NC EB

The NC EB is applicable to all European TSOs and DSOs that fall under the requirements of the Third Energy Package and all BRPs and BSPs.

Specifically the Framework Guidelines states *“The Network Code on Electricity Balancing shall take precedence over relevant national frameworks (legislation, regulation, codes, standards, etc.) for cross border and market integration issues and national frameworks shall be adapted to the extent necessary, to ensure proper implementation at the national level”*.

4.6 INTERACTION WITH OTHER NETWORK CODES

4.6.1 Network Code on Load Frequency Control and Reserves

The Network Code on Load Frequency Control and Reserves (NC LFCR) prescribes cooperation between TSOs in respect of frequency criteria of the Synchronous Area. It determines volumes and distribution of reserves to ensure Operational Security as well as technical requirements for the safe Exchange of Reserves and Sharing of Reserves and their cross-border activation. Generally, parameters of frequency quality criteria refer to Synchronous Areas and are further broken down into requirements for LFC Areas.

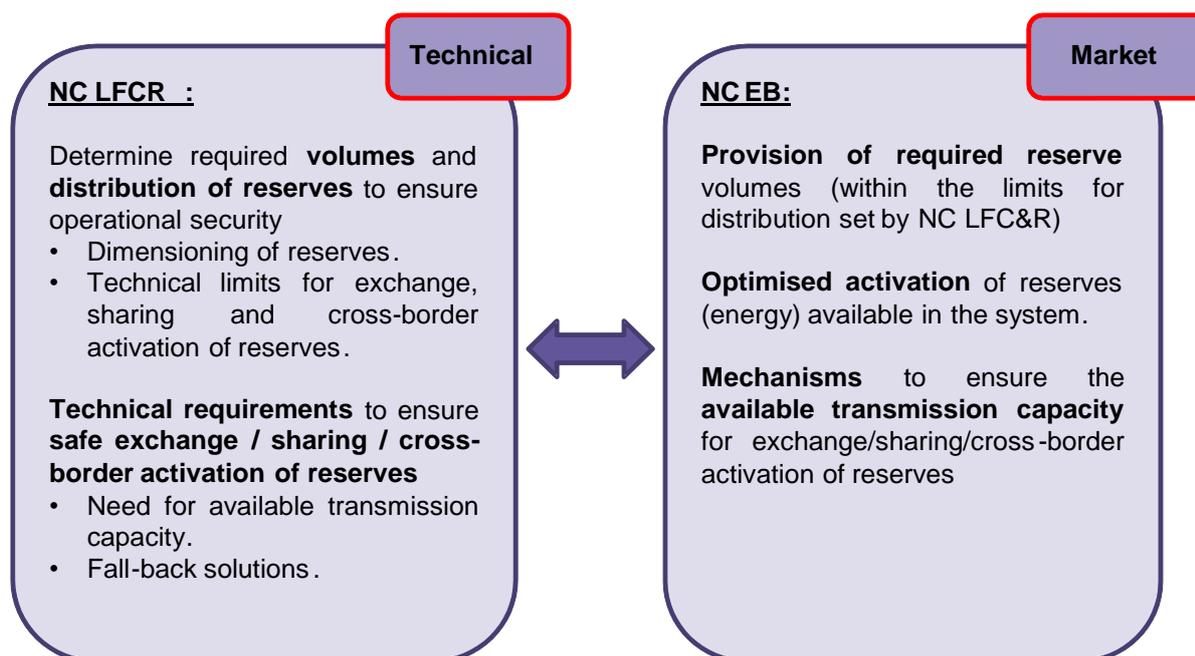


Figure 6: NC LFCR and NC EB Interaction

The NC LFCR further introduces an area hierarchy and defines among others: FRR, RR, cross-border FRR, cross-border RR and Imbalance Netting. NC LFCR foresees exchanging and sharing FRR and RR within defined limits if there is available transmission capacity but does not say explicitly to what transmission capacity it refers. If cross-border products (exchanged or shared) are not available, the Operational Security of the LFC Area must still be ensured. The pan-European Balancing mechanism as defined in NC EB must stick to the technical limits defined in the NC LFCR. Items which have been covered in this NC LFCR, such as DSOs' rights, are not repeated in the NC EB.

4.6.2 Network Code on Capacity Allocation and Congestion Management

The Network Code on Capacity Allocation and Congestion Management (NC CACM) defines Bidding Zones as a measure to manage congestions and to efficiently allocate scarce transmission capacities between Bidding Zones. It covers day ahead (DA) and Intraday (ID) timeframes and defines rules for trading energy implicitly including transmission capacities. The NC CACM defines two methodologies for transmission capacity calculations: the Flow Based Approach and the coordinated Net Transfer Capacity (NTC) approach, and indicates flow based as the preferred solution. The NC CACM foresees

that already allocated Cross Zonal Capacity shall be taken into account in calculating Cross Zonal Capacity for day ahead and Intraday timeframes.

Reservation of transmission capacities for Balancing Services has been handled with a similar approach. The FG EB states that TSOs are obliged to justify and receive approval of NRAs to reserve any transmission capacities. This therefore means that reservation of transmission capacities between Bidding Zones in the same LFC Area also requires NRA approval. Based on both NC EB and on the NC CACM, the Reliability Margin should not be used to reserve transmission capacities for exchanging reserves or for Balancing Energy between Bidding Zones and/or LFC Areas, except for FCR.

The NC CACM foresees the introduction of common maximum and minimum prices; addresses transmission capacity firmness issues; and also states that the Intraday Gate Closure Time shall be at a maximum of one hour prior to the start of the relevant Market Time Period. Although the area hierarchy from NC CACM will suffice for most TSOs regarding the areas for which they will determine Imbalances and Imbalance prices, existing exemptions force NC EB to define the areal concepts of Imbalance Area and Imbalance Price Area (see 4.7.8.)

4.6.3 Links to Network Code on Operational Security

The Network Code on Operational Security (NC OS) defines the TSO's responsibility for System Security. The Responsibility Area is in most cases equal to the LFC Area. An essential input for ensuring System Security is detailed analysis based on accurate data, contained in the Common Grid Model, to properly reflect situations in the system.

At the interface between NC OS and NC EB, analysis is required to provide that Exchange of Reserves is compatible with Operational Security limits. Balancing actions are taken close to real-time, therefore in the NC EB mention has been made of the need to ensure that any transactions in this timeframe are always technically feasible (i.e. shall be compatible with Operational Security limits).

Remedial actions used/considered after the day ahead and Intraday timeframe may use the same resources as are available for Balancing, and this risk has been noted.

4.6.4 Links to the Network Code on Operational Planning & Scheduling

The Network Code on Operational Planning and Scheduling (NC OPS) refers to NC EB and NC LFCR in the area of Exchanging of Reserves. It requires that Significant Grid Users and Distribution System Operators (DSOs) provide information on available Balancing Services, but details of the requirements should be defined in the NC on Requirements for Grid Connection (NC RfG). The NC OPS foresees the establishment of a TSO-platform for the exchange of relevant data between TSOs.

4.7 CLARIFICATION ON CONCEPTS USED WITHIN THE NC EB

4.7.1 Definitions

The definitions used in this NC EB supporting document are the same as those used in the NC EB itself. To ensure consistency in the use of definitions across Network Codes and other TSO publications ENTSO-E has developed the ENTSO-E Metadata Repository (EMR). The EMR Glossary contains a comprehensive set of definitions collected by ENTSO-E. The Glossary also contains definitions of commonly used acronyms. The EMR Glossary is publically accessible on the following URL: <https://emr.entsoe.eu/glossary/bin/view/Main/>.

4.7.2 Coordinated Balancing Area

The NC EB introduces the concept of the Coordinated Balancing Area (CoBA) as a vehicle to reaching the European integration model in the timeframe defined by the FG EB. Every TSO is obliged to cooperate with one or more TSOs in a CoBA by exchanging one (or more) Standard Product(s) or through implementation of an Imbalance Netting Process.

The CoBA concept is central to the phased approach of reaching the FG EB targets. It provides for early cooperation between TSOs while allowing prudent flexibility. TSOs as well as all Balancing Market parties shall gain experience of how cooperation in Balancing can achieve the highest benefit. This experience then supports the further evolvement of a pan-European Balancing Market. As time passes the level of cooperation within a CoBA and between neighbouring CoBAs will increase; neighbouring CoBAs will merge; and finally all CoBAs will merge to reach the FG EB target of a single pan-European Common Merit Order List.

While the exchange of one (or more) Standard Products is compulsory within a CoBA from the beginning, Exchange of Balancing Capacity and Sharing of Reserves are not mandatory but an option. CoBAs for Balancing Capacity can be smaller than those for Balancing Energy (if established).

4.7.3 More detailed information on CoBAs is contained in Article 10 Incentives for the Integration of Balancing Markets

In addition to the more obvious requirements and targets of the NC EB to incentivise the integration of Balancing Markets, the NC EB contains various provisions creating incentives for TSOs to cooperate and hence promote the integration of Balancing Markets including the harmonisation of market mechanisms.

As a starting point for the integration, the NC EB foresees that TSOs have to cooperate with at least one other TSO two years after the entry into force of the NC EB. As the mid-term and long-term targets have been established and the requirement to establish CoBAs which include many more than the initial minimum two TSO areas, this requirement leads TSOs to evaluate a potential efficiency to be gain from cooperation in a longer run, and hence create an incentive that TSOs strive for the establishment of larger CoBAs to those established already at the outset of the NC EB, as this reduces costs and efforts for necessary further steps.

In addition to the obligation to develop a framework for the terms and conditions related to Balancing, which requires the TSOs of a CoBA to harmonise the applicable conditions for market participation (which is crucial to ensuring fair competition and reducing transaction costs), the requirements for cooperation within a CoBA also create further incentives.

An important element is the flexibility of cooperation between CoBAs. The NC EB does not contain requirements for these, other than those applicable for the underlying CoBAs. This set-up lowers the burden for TSOs to evaluate and implement inter-CoBA initiatives, while at the same time requires all TSO of both cooperating CoBAs to establish rules compatible with the conditions for the internal Balancing Markets of the respective CoBAs. Consequently, the TSOs are incentivised to create rules for an inter-CoBA cooperation facilitating the merging of CoBAs, but also to harmonise the internal rules of the CoBAs.

In the event that TSOs are active in different CoBAs (for different products), they will have to ensure compatibility between the frameworks for the terms and conditions related to Balancing, as these TSOs have to create a single set of terms and conditions in line with these frameworks. This drives the requirement for TSOs to ensure compatibility between the various frameworks which leads to

harmonisation of these, which in turn facilitates further integration, e.g. through the merging of the respective CoBAs.

The requirement that functions have to be established within a CoBA to operate central algorithms also fosters integration. As both, the establishment of a function, with all its rules and responsibilities, and the development of the necessary algorithms are costly and time-consuming, TSOs have incentives to develop rules and tools which are flexible enough to be applied in more than one CoBA.

In parallel with the implementation of the NC EB is the work which is underway among various TSOs in establishing and managing pilot project associated with Balancing. This is seen as complementary work to the implementation of the NC EB and is expected to act as further incentive for the continuous and ambitious integration of Balancing Markets. The experience gained in the pilot projects is expected to confirm that integration leads to significant reductions in Balancing costs and hence creates Social Welfare gains. This conclusion will then hold true for future initiatives established as part of the implementation of the NC EB, highlighting to regulators, Market Participants and TSOs the benefits of integration such as the opening of markets allowing for more market activity; the avoidance of counteracting activation of Balancing Energy; and ultimately achieving efficient costs, including the costs of Balancing.

4.7.4 Procurement of Balancing Energy and Common Merit Order List

The regulatory requirement for Balancing Energy is that the Exchange of Balancing Energy must eventually be based on a TSO-TSO Model with an associated Common Merit Order List. These regulatory requirements are more specific than those for the Exchange of Balancing Capacity.

The criteria for the procurement of Balancing Energy within a CoBA are:

- (a) Definitions for each Standard Products for Balancing Energy are consistent;
- (b) Procurement is based on Balancing Capacity bids which have already been accepted and allocated for activation uniquely by the TSO who accepted them, and on additional Balancing Energy bids submitted voluntarily by Balancing Service Providers without reserve contracts. non-Balancing Capacity or Balancing Energy providers;
- (c) Pricing methods for the Common Merit Order List are harmonised;
- (d) Cross Zonal Capacity must be available after Intraday or reserved previously in accordance with Chapter 4 of NC EB; and
- (e) The size of the Balancing Capacity dimensioning should be not affected by cross-border exchange (respect NC LFCR).

There is a phased approach on how to achieve a European wide Exchange of Balancing Energy. This approach is to allow coordination on a regional basis first (thus the development of the CoBA concept), followed by a merging of these regional initiatives. Each region should thus be mindful of the developments in other regions and should follow a similar structure so that wider coordination can easily be achieved later.

The section on procurement of Balancing Energy describes the actions which occur ahead of real-time and which are needed to build the Common Merit Order List. The procurement of Balancing Energy is then followed by the activation of Balancing Energy which is the real-time action to deliver actual contracted Balancing Energy (in one direction or the other).

There are a number of steps involved in the procurement of Balancing Energy. Balancing Energy bids can be placed either on a local or regional TSO procurement platform by both providers of contracted Balancing Capacity or BSPs who have no contracted reserves (e.g. demand, renewable generation units, and variable and smaller generation units). These Balancing Energy bids can be updated until Balancing Energy Gate Closure Time. After Intraday Cross-Zonal Gate Closure Time and before Balancing Energy Gate Closure Time the BSPs can continue to change their Balancing Energy Bids which were previously submitted or submit new bids. After the Balancing Energy Gate Closure Time their Balancing Energy bids can only be changed after approval of all TSOs of the relevant CoBA. The TSO procurement platform sends the Balancing Energy bids with the corresponding energy price to the common bid collection function (where multiple Balancing Energy procurement platforms exist) which then builds the Common Merit Order List. This Common Merit Order List is part of the input for the central Activation Optimisation Function. A confirmation is sent back to the local tendering system. This process establishes the need for a harmonised pricing method which may be either marginal pricing or pay-as-bid.

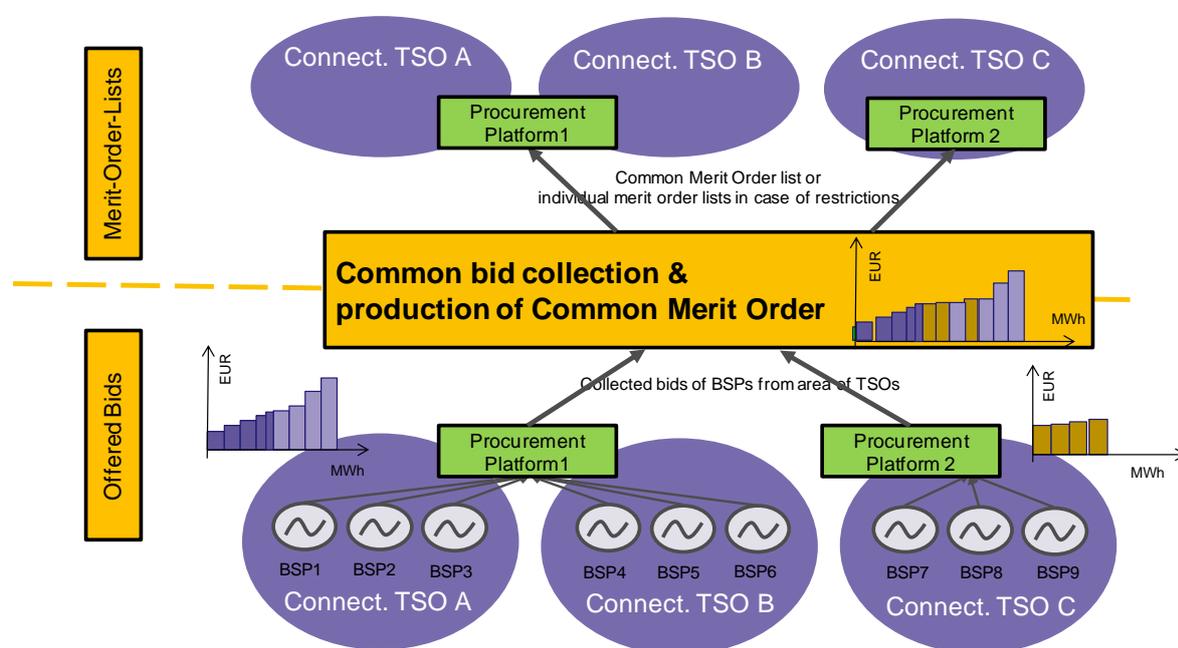


Figure 7: Procurement of Balancing Energy with Common Merit Order List – Example of CoBA with three TSOs

In Figure 7 TSO C has a local TSO procurement platform which sends Balancing Energy bids to the common bid collection function. TSO A and TSO B operate a regional TSO procurement platform which combines Balancing Energy bids from the TSOs and sends the combined Balancing Energy bids to the common bid collection function. The Common Merit Order List is then produced which shows TSO C's Balancing Energy bids slotted in with the combined Balancing Energy bids from the other two TSOs in merit order. The results of the process are then returned to the local and regional TSO procurement platforms.

4.7.5 Activation Optimisation Function

The Activation Optimisation Function is central to the process of the activation of Balancing Energy.

In order to enable the cross-border Exchange of Balancing Energy, the activation of Balancing Energy has to be coordinated by a common function. This function, known as the Activation Optimisation Function, determines the most efficient activation of the incoming balancing request while respecting some capacity and operational restrictions. The Activation Optimisation Function is responsible for using the algorithm which is commonly developed by the TSOs. The activation itself is done by the controlling units of the respective TSOs. This activation is automatically done for FRR automatic or manually done for both FRR manual and RR. In order to implement this activation process robust communication procedures are required between the common function and the controlling units/operators.

The steps involved in the activation of Balancing Energy are as follows:

1. TSOs send their requirements to the Activation Optimisation Function.
2. After the Balancing Energy Gate Closure Time, the Activation Optimisation Function calculates the most efficient activation taking the following into account:
 - (a) Common Merit Order List containing all Balancing Energy bids
 - (b) Available cross-border capacity either available after Intraday or reserved previously
 - (c) Network stability constraints
 - (d) Balancing requirements of the TSOs
 - (e) Imbalance Netting potential
3. Activation Optimisation Function sends the individual activation amounts (as a correction signal) to each responsible TSO (Connecting TSO).
4. The Connecting TSO activates the successful Balancing Energy bids (via a phone call or automatically by activation system such as a MOL-Server or local controller).
5. Balancing Energy is exchanged through commercial schedules or virtual tie-lines.
6. Balancing Energy is settled between the providers and the TSOs involved.

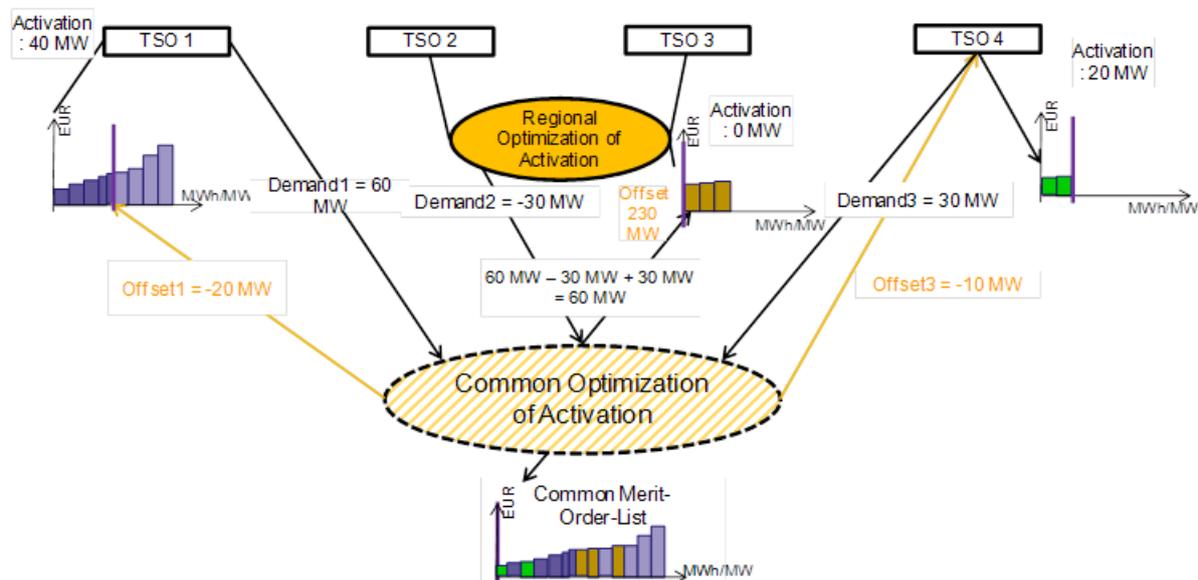


Figure 8: Example of the Activation Model

In the above Figure 8, there are four TSOs involved. Each TSO sends their Balancing Energy requirements to the common Activation Optimisation Function. TSO 1 has a requirement for 60 MW. TSO 2 and TSO 3 operate on a regional basis and have a combined surplus of 30 MW. TSO 4 has a requirement for 30 MW. Each TSO also sends their Balancing Energy bids to the common bid collection function which produces a Common Merit Order List (TSO 1 and TSO 3 have combined their Balancing Energy bids on a regional basis before submitting them to the common bid collection function). The common Activation Optimisation Function calculates the cross-border Balancing activation volumes and TSO 1 and TSO 4 receive 20 MW and 10 MW of Balancing Energy respectively, all of which comes from the TSO 2/3 Balancing Energy bids. The remainder of TSO 1 and TSO 4 Balancing Energy demand is sourced from their own BSPs. Each TSO then instructs the activation of Balancing Energy accordingly – TSO 1 and TSO 4 activate 40 MW and 20 MW of Balancing Energy respectively.

4.7.6 Cross Zonal Capacity for Balancing Services

Any Cross Zonal Capacity that is available after Intraday Gate Closure Time can be used for cross-border Balancing. Chapter 4 of the NC EB, however, also foresees the possibility of reservation of Cross Zonal Capacity for Balancing purposes in earlier timeframes. The TSOs do not get exclusive access to Cross Zonal Capacity for the Exchange of Balancing Services or Sharing of Balancing Reserves without providing the Cross Zonal Capacity to the market, but TSOs can use the Probabilistic Approach or the approaches for the reservation of Cross Zonal Capacity as described in the NC EB and pay for the reservation.

4.7.7 Application of NC EB to Central Dispatch Systems

In order to operate a safe, secure, reliable power system various functions need to be performed. These functions must be performed for all power systems and can be performed by different entities. At a high level, the main functions are the generation of electricity; the consumption of electricity; the provision of reserves to allow for unplanned contingencies; the scheduling of these reserves; the adjustment of planned generation/consumption schedules to allow for various forecast errors; the management of congestion on the transmission system to obey thermal and voltage limits; the management of other physical limitations.

In order to perform these functions in an economic and efficient manner, power system operation is carried out in several different ways. They can be basically grouped into two families: Self-Dispatch model and Central Dispatch model. These models differ by placing the responsibilities for performing and coordinating functions performed to operate power systems on different entities.

Pursuant to Article 8(6) of the Electricity Regulation, the NC EB is obliged to take into account the regional specificities of different electricity market designs. In particular ENTSO-E must take into account the parallel existence of Central Dispatch and Self-Dispatch arrangements of European electricity markets when drafting the NC EB in line with the FG EB. Central Dispatch models typically occur in electrical systems where the impact of locational market imbalances is a material threat to the security of the system. In such systems, a Central Dispatch model can be considered a necessity. In some countries (e.g. Greece, Hungary, Ireland, Italy, Northern Ireland and Poland) there is a need for Central Dispatch in order to ensure System Security and minimise the cost of energy delivery to the end consumer. It is not expected that the number of TSOs operating Central Dispatch systems will increase or decrease in the near future.

In compliance with the FG EB, the NC EB takes the regional specificities of the different electricity market designs into account, in particular, the parallel existence of Self Dispatch and Central Dispatch arrangements in Europe.

Self Dispatch is a dispatch arrangement where resources determine a desired dispatch position for themselves based on their own economic criteria to provide commercial independence within a market. The physical dispatch can be either carried out by the resource directly, tracking their desired output nomination or by following dispatch instructions from the TSO which has been determined based on resources' nominations. Imbalance charges/penalties are levied on market parties which deviate from their notified position. Commitment decisions, which take into account generating unit constraints, are made by the generators in conjunction with the demand elements they are Balancing with. Generators alter their output to maintain the balance between generation and served demand. Before real-time, generators submit bids to the TSO which corresponds with self-schedules of their units. Bids are used by the TSO to dispatch additional generation needed to balance and secure the system in real-time. Most of the energy markets in Europe are based on the Self Dispatch principle.

Central Dispatch is a dispatch arrangement where the TSO determines the dispatch values and issues instructions directly to resources. The TSO determines the dispatch instructions based on prices and technical parameters provided by the resources, as well as whole network model. The typical objective for the dispatching process (or unit commitment process) is the minimisation of energy delivery cost to meet system demand as forecasted by the TSO while complying with Operational Security requirements. The main distinguishing feature of Central Dispatch systems is that Balancing, congestion management and reserve procurement are performed simultaneously in an integrated process. This can involve dispatch instructions being issued many hours ahead of real-time, to start up units, to real-time instructions for dispatching on-line units.

Each power system has a unique mixture of features. Some features affect the level of intervention a TSO has to have on the market-based schedule to form the operational schedule. Where there is significant intervention, system operation tends to move from the Self Dispatch model to a more Central Dispatch model in order to optimise electricity market operation and transmission system operation and thus ensure economic efficiency. The particular power system features which may dictate the optimum dispatch model include the following:

System: the size, the level of Operational Security restrictions (wind percentage, inertia, ramping duty etc.), the reserve requirement relative to generation/demand

Generation: the number of generators, the size of individual generators relative to the total system size, the flexibility of generation portfolio (start times, ramping times etc.)

Transmission: the nature and extent of network constraints (thermal, voltage, stability, short circuit etc.).

Uncertainty: the predictability of demand, the level of penetration of intermittent generation, the level of variation of through flows on Interconnectors

The FG EB and hence the NC EB is predominantly designed from a Self Dispatch model point of view. The Central Dispatch model requirements are met through special provisions. These provisions allow for the efficient integration of Central Dispatch and Self Dispatch systems within pan-European Balancing Market and the efficient functioning of Central Dispatch systems. As Balancing timeframe is very close to the real-time, there is no possibility to correct results internally, and therefore mechanisms have to be designed, to produce results, which are feasible for all systems. The special provisions for Central Dispatch systems included in NC are as follows:

- Allowance for TSO to convert/refine BSP's bids before submission to Activation/Procurement Optimisation Function
- Allowance for TSO to set special rules for submitting, activation and updating bids by BSPs
- All rules have to be fair, transparent, non-discriminating and NRA approved.

Figure 9 illustrates a simplified possible example of a Balancing process in a Central Dispatch system. The BSPs submit commercial and technical bids to the TSO. The TSO takes these bids into account along with demand forecast and system conditions to produce an operational schedule which incorporates Balancing, reserve and congestion management restrictions. The TSO issues preliminary dispatch indications including synchronisation instructions and reserve allocation. Closer to real-time the TSO issues dispatch instruction which may be adjusted from earlier indications to allow for changes to forecast data and system state. The TSO then considers cross-border products which may result in economic exchange of Balancing products which in turn require a further adjustment to the BSPs' positions as dispatched by the TSO.

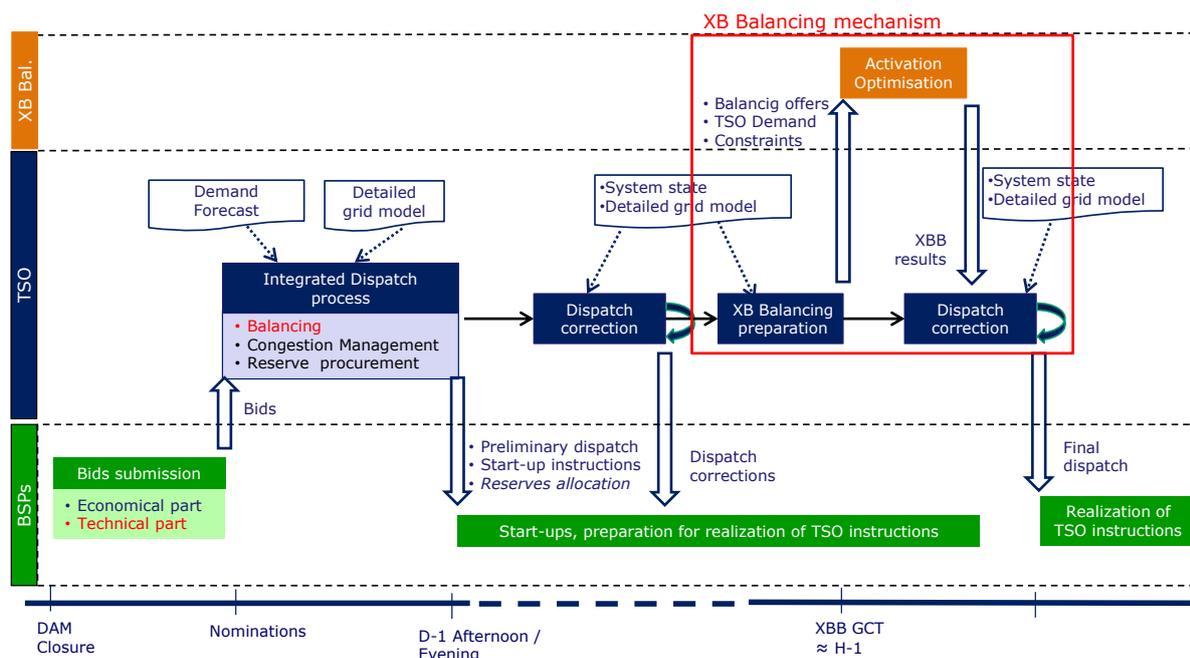


Figure 9: Balancing in a Central Dispatch system (an example)

Due to the nature of the dispatch arrangements, the NC EB gives TSOs of Central Dispatch systems the option to propose amendments to the rules for updating Balancing Energy bids such as requiring bids before start of local integrated dispatch process and limiting the possibilities to change submitted bids due to on-going dispatch process. The NC EB also entitles TSOs of Central Dispatch systems to convert bids submitted by BSPs before submitting them into common procurement or activation. This allows TSOs to reflect in cross-border Balancing bids submitted by the TSOs their previous actions; current system state; technical availability of bids; and real cost of their activation. There are no special arrangements for Central Dispatch systems in Imbalance Settlement.

4.7.8 Imbalance Area and Imbalance Price Area concepts

Both NC CACM (left) and NC LFCR (right) introduce hierarchical areal concepts:

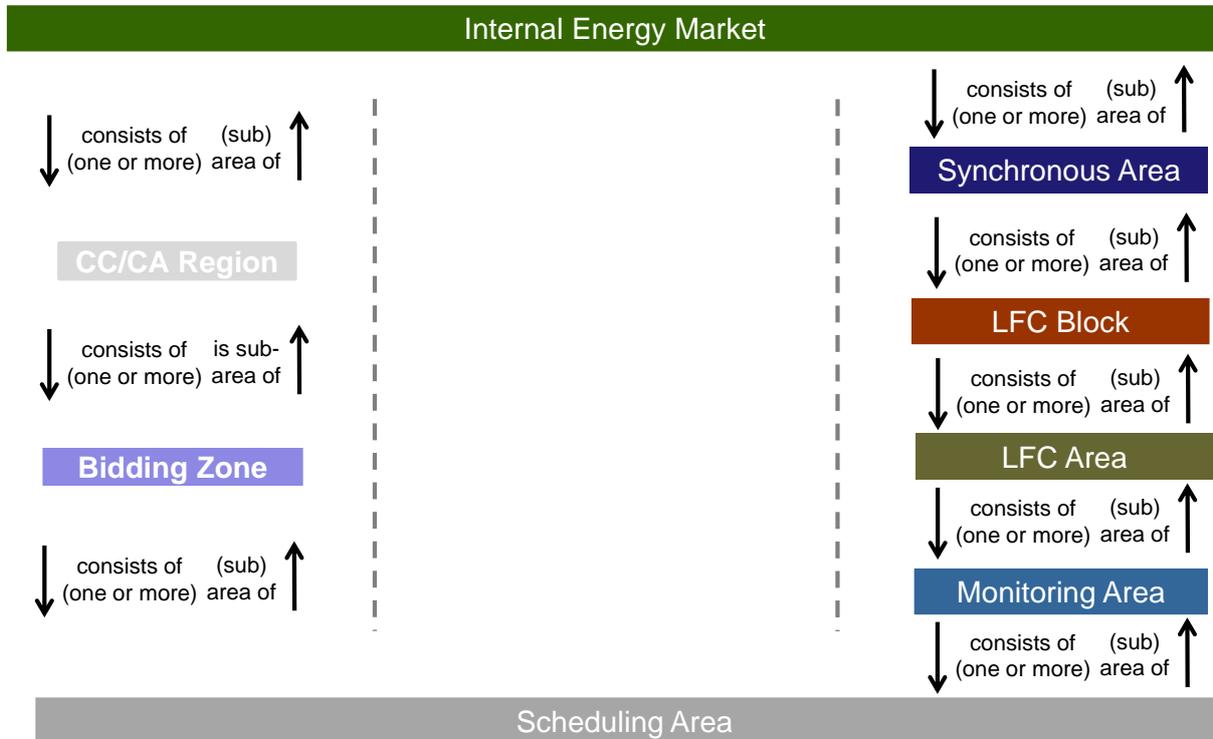


Figure 10: Overview of the hierarchical area concepts of NC CACM and NC LFCR

These are not fully hierarchical consistent over and within all Synchronous Areas:

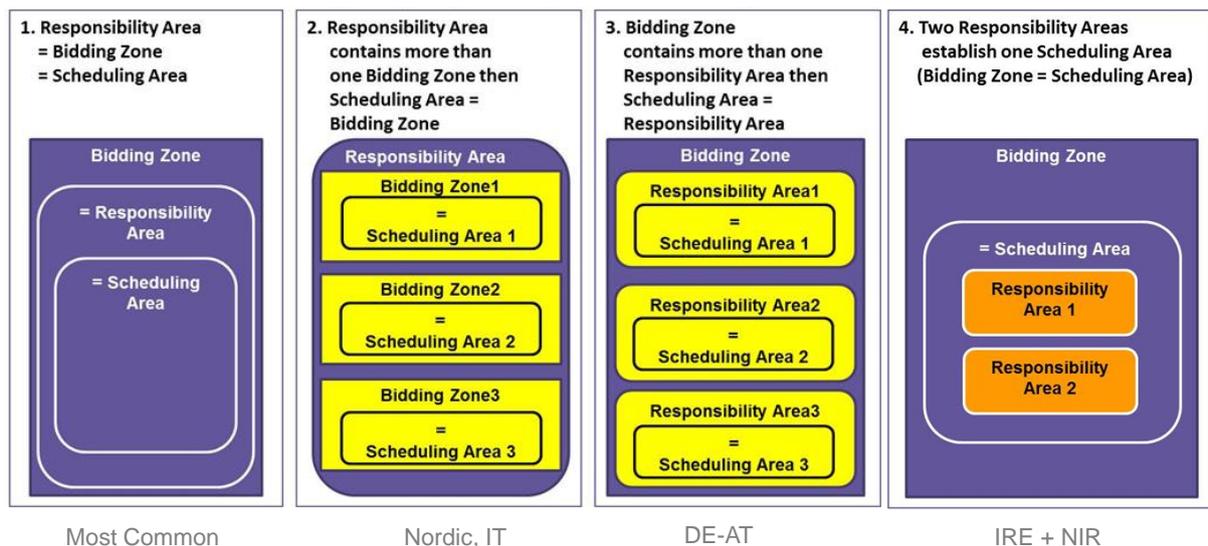


Figure 11: Relation between Scheduling Area, Responsibility Area and Bidding zone (NC OPS SD)

Thus NC EB introduces the hierarchical areal concepts of Imbalance Price Area and Imbalance Area. In Article 26 par 5 sub (d) is arranged that the TSO shall delineate the Imbalance Price Area and Imbalance Area.

In the most common configuration:

Responsibility Area = Bidding Zone = Scheduling Area = Imbalance Price Area = Imbalance Area

While for Nordic:

Bidding Zone = Scheduling Area = Imbalance Price Area = Imbalance Area

And for Germany/Austria: LFC Block = one or more Responsibility Area = Imbalance Price Area;
Responsibility Area = Scheduling Area = Imbalance Area

4.8 WORKING WITH STAKEHOLDERS & INVOLVED PARTIES

Through the Comitology process, the NC EB as all Network Codes becomes legally binding, and brings concrete implications for all participants in Electricity Balancing across Europe. As such, ENTSO-E has recognised the importance of engaging with stakeholders at an early stage, involving all interested parties at the earliest possible phases in the development of the NC EB in an open and transparent manner.

ENTSO-E's stakeholder involvement comprises several public stakeholder workshops before, during and after public consultation, as well as a series of meetings with the Electricity Balancing Stakeholder Advisory Group (EBSAG). This is shown in Figure 12 to the right. Ad-hoc meetings and exchange of views with all interested parties are set up as necessary. Information on both public stakeholder workshops and EBSAG meetings can be found on the ENTSO-E website (<https://www.entsoe.eu/major-projects/network-code-development/electricity-balancing/>).

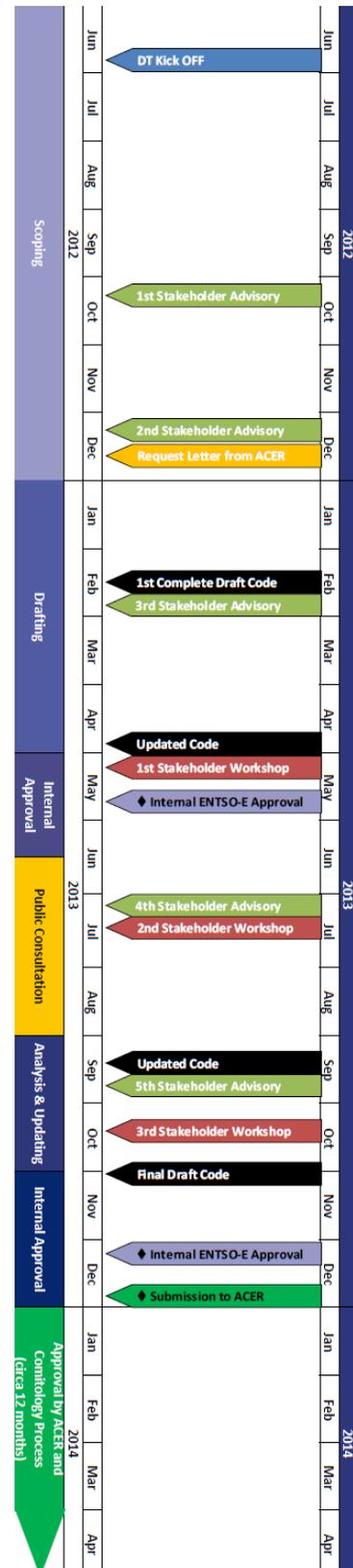


Figure 12: Stakeholder involvement during drafting of NC EB

5 FRAMEWORK GUIDELINES

5.1 INTRODUCTION

During 2011 and 2012 ENTSO-E and its Working Group on Ancillary Services (WGAS) had numerous interactions with ACER in their development process of the Framework Guideline on Electricity Balancing (FG EB). Concerns and proposals for amendments were put forward in ENTSO-E's response to the consultation on the FG EB.

The final version of the FG EB is was published in September 2012 and the roadmap of the integration of the European Electricity Balancing Market is prescribed in that document to follow a step-wise approach as indicated in Figure 13 below.

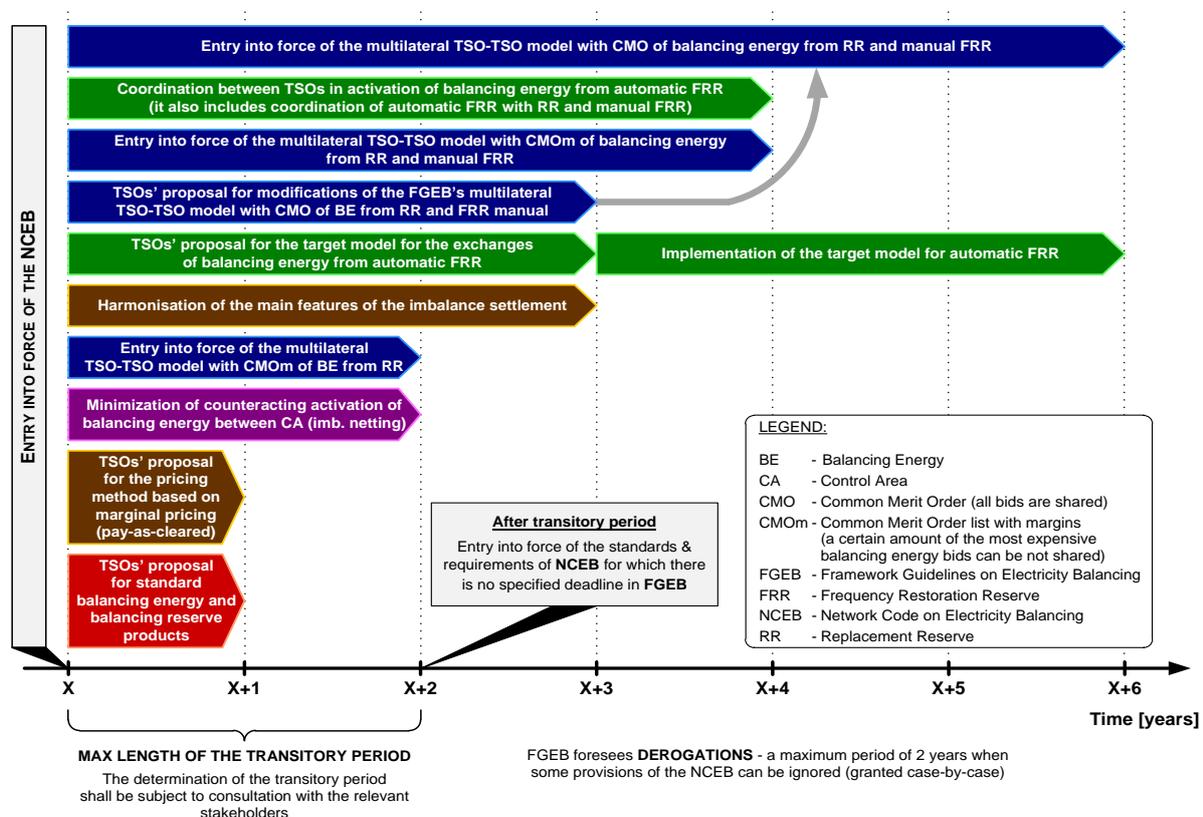


Figure 13: Entry into force of the NC EB

5.2 RELATIONSHIP BETWEEN NETWORK CODE & FRAMEWORK GUIDELINES

The NC EB sets the basis for an integrated, harmonised and coordinated Balancing Market, and identifies three major areas:

- Procurement of Balancing Services
- Balance responsibility and Imbalance Settlement
- Reservation of Capacity

The requirements described in the NC EB have been formulated in line with the Framework Guidelines, with the aim of developing on a regional and step-wise basis after the transitory period for the necessary levels of integration and harmonisation of Balancing Markets.

5.3 DEVIATIONS AND OMISSIONS

In developing the NC EB, there are a limited number of areas where an alternative approach has been chosen in the NC EB to that set out in the Framework Guidelines. These areas and an explanation of the deviation are provided below:

5.3.1 Dimensioning and Sharing of Balancing Capacity

Chapter 3.4.1 as well as 3.4.2 of the Framework Guidelines requires TSOs adjust their dimensioning of Balancing Capacity taking into account *potential gains from the sharing of reserves and balancing energy* which is to say to diminish the amount of reserves.

NC EB does not touch upon the question of dimensioning, since this lies within the scope of NC LFCR.

5.3.2 Capacity Provision Methodology

Chapter 4.3 of the Framework Guidelines requires *any decision on cross-border transmission capacity reservation for balancing [to be] taken on a case-by-case basis, by relevant NRAs supported by a full cost-benefit analysis and market consultation*. NC EB reflects this requirement in Chapter 4 on the reservation of Cross Zonal Capacity for Balancing Services, which states that TSOs must deliver the relevant methodologies at least one year before their implementation, allowing the necessary time for stakeholder consultation and regulatory approvals.

5.3.3 Tools for Real-Time Monitoring of Balancing

Chapter 2.5 of the Framework Guidelines states that the NC EB *shall require that TSOs develop tools ensuring real-time monitoring of performance and quality of balancing in order to maintain their area control error inside a defined range corresponding to each control area, in accordance with the provisions of Network Code on Load Frequency Control and Reserves*.

This obligation is not covered in NC EB, since it is deemed to be sufficiently covered by NC LFCR.

In Chapter 1.2 of FG EB, ACER recognises that in the interest of covering all requirements, *issues, which are relevant to more than one framework guideline, are mentioned in each appropriate set of guidelines and some redundancy might emerge from this approach*. A repetition in NC EB does not seem to be required.

6 NC EB: OBJECTIVES, REQUIREMENTS

This section describes in more detail the structure and the content of the NC EB, and the principles on which the individual chapters have been built. The NC EB is built up as follows:

- **Purpose and objectives (outside chapter numbering)**
- **Chapter 1: General provisions (Article 1-9)**
- **Chapter 2: The Electricity Balancing System (Article 10 – 23)**
- **Chapter 3: Procurement of Balancing Services (Article 24 - 37)**
- **Chapter 4: Cross Zonal Capacity for Balancing Services (Article 38 - 46)**
- **Chapter 5: Settlement (Article 47- 64)**
- **Chapter 6: Algorithm Development (Article 65- 66)**
- **Chapter 7: Reporting (Article 67)**
- **Chapter 8: Transitional Arrangements (Article 68-70)**
- **Chapter 9: Final Provisions (Article 71)**

This section aims at providing the reader the basis for understanding the requirements set in the chapters marked above of NC EB.

OVERVIEW OF THE NC EB

The process flow diagram on the following pages sets out the operational process steps in quadrants. It should be followed in a clockwise direction. A timeline is shown for the bidding quadrant only.

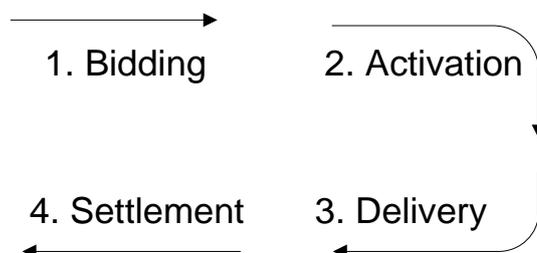
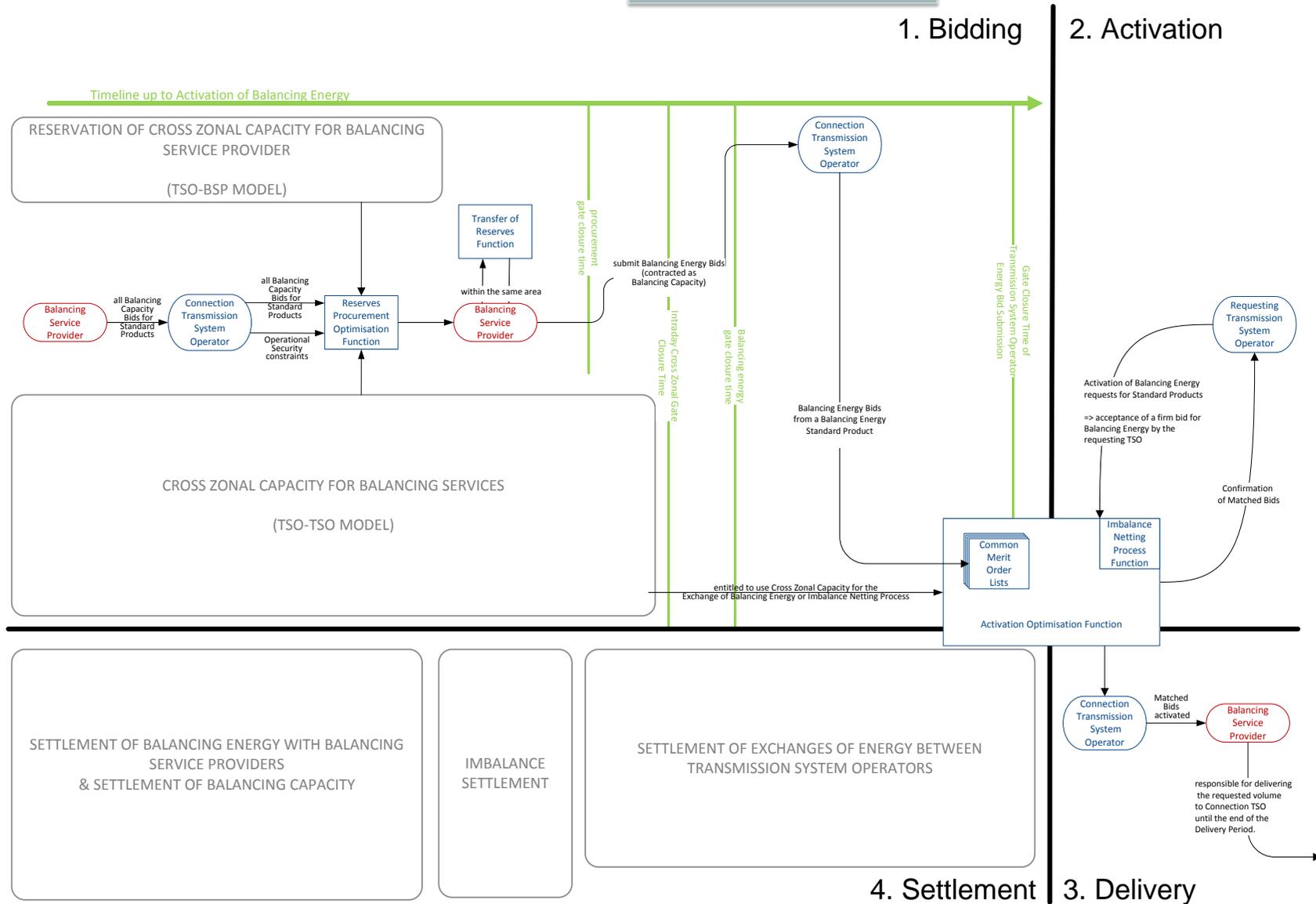


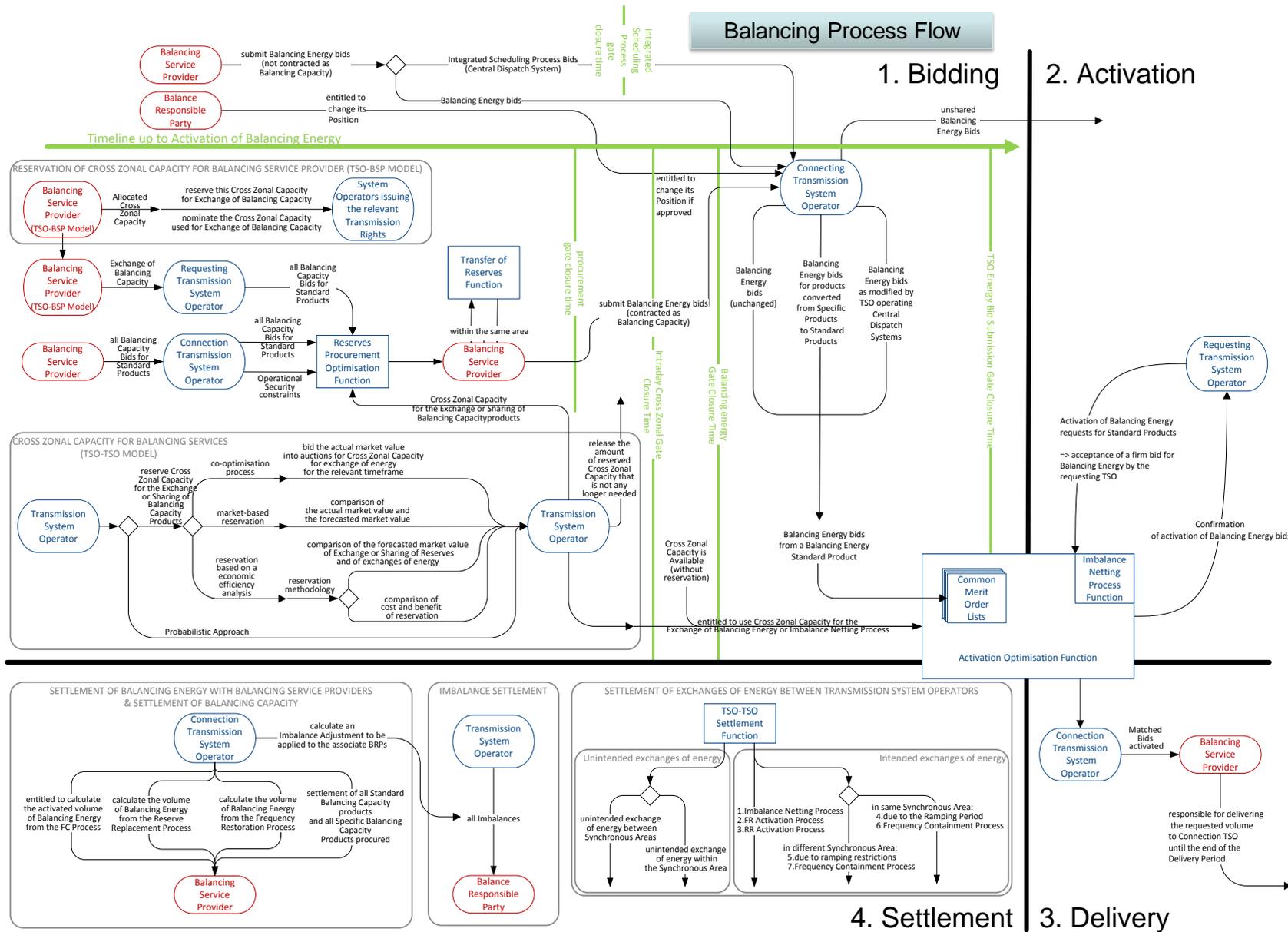
Figure 14: Operational Process Steps

It is intended to provide an overview and therefore does not contain all aspects of the NC EB. It excludes details including some steps relating to:

- particulars of some Balancing Service products
- DSO involvement
- re-qualification
- provide a balanced Position in the day ahead timeframe if requested
- details for terms and conditions related to Balancing
- Fall back procedures

Balancing Process Flow





CHAPTER 1 – GENERAL PROVISIONS

Article 1 - Subject Matter and Scope

This article defines the scope of the NC EB as well as the parties who are affected by its rules.

Article 2 – Definitions

As per European legislation, this article contains the definitions required for the NC EB. Where possible, ENTSO-E has used terms which have been previously defined in Network Codes drafted before this NC EB. Such terms are capitalised and their definitions are not repeated in the NC EB.

ENTSO-E is ensuring consistency with definitions used in other Network Codes as well as other related documents and is striving to grant easy access to the full body of definitions. Terms that are already defined in other Network Codes are thus not included here.

Key definitions from other Network Codes include:

- Sharing of Reserves,
- Exchange of Reserves
- Bidding Zone
- Responsibility Area
- Scheduling Area,
- Synchronous Area,
- LFC Block,

Article 3 – Recovery of Costs

According to this article, costs arising from the NC EB to regulated Network Operators (both TSOs and DSOs), where this may be relevant, are considered as part of regulated costs. Each party must demonstrate with sufficient proof to its NRA that these costs are efficient, reasonable and proportionate.

Article 4 – Confidentiality Obligations

While transparency and access to relevant information is crucial to the success of a regional or pan-European Balancing Market, commercially sensitive information is protected by Article 4.

Article 5 – Consultation

This article specifies all items which have to be publically consulted on and contains all references to these items. References are consequently not contained in the Articles wherein these items are required to be developed.

Stakeholder involvement after entry into force, however, extends beyond participation in a public consultation, as shown in a generic way in Figure 15. During the drafting phase, be it by individual TSOs or groups of TSOs, stakeholder involvement may be organised as suitable to the subject and thus not regulated in the NC EB. While some topics might be drafted internally, the development of others will be accompanied by user group meetings, bilateral discussions or questionnaires. It lies in the interest of the party responsible for the drafting to include diverse views early on in the process to achieve a concept that enjoys wide acceptance for later adoption and implementation.

Once a stable draft is available, the party responsible for all items listed in this article is obliged to carry out a public consultation, which is the core element of stakeholder involvement. Such a public consultation may be accompanied by workshops or meetings, depending on the subject at hand. The obligation for a public consultation is tied to the content developed and binds the party responsible. Any public consultation listed here must span a time period of at least four weeks, as laid out in the FG EB. This is a minimum requirement and the consultation time period may be extended depending on the subject matter.

Comments received during the consultation must be duly considered and this consideration be made transparent. Based on these inputs, the party responsible will amend the concept and finalise the proposal, usually for submission to the relevant NRA for approval. Again depending on the subject in question, the party responsible may choose different methods of guaranteeing transparency, be it through publication of all comments received, a workshop with all stakeholders involved in the public consultation or other methods.

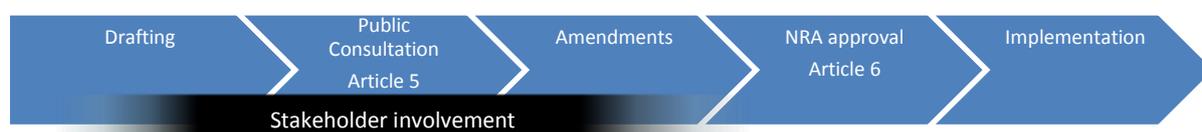


Figure 15: Stakeholder involvement

Article 6 – Regulatory Approval

This article specifies the items which are to be approved by different sets of NRAs and contains all references to these items. References are consequently not contained in the Articles wherein these proposals are required to be developed. It further details different approval periods in accordance with the FG EB: three months in the case of an individual NRA approval and six months in cases where more than one NRA have to assess an item for approval in a cooperative manner. It contains timeframes for the resubmission of amended proposals, if requested by the respective NRA(s). The article differentiates between proposals which:

- are of relevance for all countries where the NC EB applies, and have to be approved by all NRAs;
- affect all TSOs within a Synchronous Area and have to be approved by all NRAs of those countries;
- only or predominantly affect CoBAs, and are to be approved by NRAs who have jurisdiction in the area in which a CoBA is established;
- affect a limited number of countries, for example all systems of two Synchronous Areas when approval of TSO-TSO settlement or two countries in the case of a TSO-BSP model, and have to be approved by all NRAs of those countries; and
- only affect the jurisdiction of one NRA, and are consequently to be approved only by that NRA.

As Capacity Calculation Regions have not yet been defined, it was not suitable to assign any approval to this regional level.

The requirements of this article highlight the need for cooperation between NRAs as stipulated by Regulation 713/2009.

Where version 1.22 of May 2013 that was published for public consultation followed the philosophy of listing all individual items for public consultation that were contained in the NC EB, the NC EB has been amended in order to demonstrate which of these are related and shall be submitted as one package. Following this approach, the newly introduced proposal for a CoBA contains all elements required to achieve regulatory approval prior to implementation of a CoBA as is detailed in Article 10 and all elements contained in the terms and conditions are approved either together with the proposal for CoBA, where relevance in the framework for terms and conditions is given, or as part of the approval of terms and conditions on national level.

If not all elements of such a package can be finalised at the same time, a preliminary proposal could be submitted for regulatory approval, to be later on updated, as relevant.

Article 7 – Publication of Information

Transparency and readily available information will be essential to a well-functioning Balancing Market. Requirements for the publication of fundamental information relevant for Balancing are included in Article 17 of Regulation (EC) No 543/2013 of 14 June 2013¹ on the submission and publication of data in electricity markets:

- 1) *For their control areas, TSOs or where applicable operators of balancing markets, where such markets exist shall provide the following information to the ENTSO for Electricity:*
 - (a) *rules on balancing including:*
 - *processes for the procurement of different types of balancing reserves and of balancing energy,*
 - *the methodology of remuneration for both the provision of reserves and activated energy for balancing,*
 - *the methodology for calculating imbalance charges,*
 - *if applicable, a description on how cross-border balancing between two or more control areas is carried out and the conditions for generators and load to participate.*
 - (b) *the amount of balancing reserves under contract (MW) by the TSO, specifying:*
 - *the source of reserve (generation or load),*
 - *the type of reserve (e.g. Frequency Containment Reserve, Frequency Restoration Reserve, Replacement Reserve),*
 - *the time period for which the reserves are contracted (e.g. hour, day, week, month, year, etc.).*
 - (c) *prices paid by the TSO per type of procured balancing reserve and per procurement period (Currency/MW/period);*
 - (d) *accepted aggregated offers per balancing time unit, separately for each type of balancing reserve;*
 - (e) *the amount of activated balancing energy (MW) per balancing time unit and per type of reserve;*
 - (f) *prices paid by the TSO for activated balancing energy per balancing time unit and per type of reserve; price information shall be provided separately for up and down regulation;*
 - (g) *imbalance prices per balancing time unit;*
 - (h) *total imbalance volume per balancing time unit;*

¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:163:0001:0012:EN:PDF>

- (i) *monthly financial balance of the control area, specifying:*
 - *the expenses incurred to the TSO for procuring reserves and activating balancing energy,*
 - *the net income to the TSO after settling the imbalance accounts with balance responsible parties.*
- (j) *if applicable, information regarding Cross Control Area Balancing per balancing time unit, specifying:*
 - *the volumes of exchanged bids and offers per procurement time unit,*
 - *maximum and minimum prices of exchanged bids and offers per procurement time unit,*
 - *volume of balancing energy activated in the control areas concerned.*

Operators of balancing markets shall be considered as primary owners of the information they provide.

Article 7 of the NC EB only covers additional items for publication.

Information must be published in a non-discriminatory manner, ensuring equal access for all parties. This will be ensured by using the central information transparency platform, established pursuant to Commission Regulation (EU) No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets and amending Annex I to Regulation (EC) No 714/2009 of the European Parliament and of the Council.

Article 8 – Delegation of Functions

This article provides the basis for all tasks that fall under NC EB to be delegated to designated entities qualified to deliver these services. Each TSO, being part of a market design area in its own right, is permitted to delegate any or all or part of the functions in the NC EB to a competent third party, for example, settlement functions or Activation Optimisation Function. The purpose of this is to ensure that the right tasks are performed in the most efficient way, and those with the capability, systems and skills to do so. For example, it would not be sensible to assign responsibility for the Activation Optimisation Function to a single TSO when the activities undertaken correspond to a whole CoBA or wider, and where the creation of a functional body for this purpose would better achieve the targets of the NC EB. Existing national organisations that undertake such tasks where appropriate should adapt their processes accordingly to comply with the NC EB. Clearly there is a need to maintain confidentiality where required, and where consistent with the transparency directive.

Since the delegating TSO remains responsible for the compliance with NC EB, it will be in its interest to monitor the compliance of the delegated tasks, even if this is not specified in the NC EB,

CHAPTER 2 - THE ELECTRICITY BALANCING SYSTEM

SECTION 1 PRINCIPLES OF THE BALANCING MARKET

Article 9 – General Objectives of the Balancing Market

The objective of Article 9 are designed to ensure that all entities that form part of, or who are stakeholders in an integrated, coordinated Balancing Market cooperate fully in the development of the systems and processes described in the NC EB. The objectives outlined correlate to the FG EB.

Article 10 – Creation of Coordinated Balancing Areas

The concept of CoBAs was devised to make implementation of the NC EB possible under the timescales envisaged in the FG EB, and to ensure that the process of creating an integrated and harmonised Balancing Market is carried out in a step-by-step approach, learning from previous steps and experience rather than simply implementing a pan-European Common Merit Order List with no previous experience. In order to gain international experience a CoBA shall consist of TSOs from at least two different member states.

The first step of the process to establish a CoBA is the submission of a common proposal for a CoBA from all TSOs intending to cooperate. In order to ensure a proper coordination between TSOs, this approach takes as a starting point the development of a common framework for the establishment of the terms and conditions between the TSOs of a CoBA. This common framework contains harmonised principles to be applied to all the Responsibility Areas of the CoBAs, ensuring a sufficient level of coordination between the TSOs and facilitating the evolution towards the different steps of the target models established in the NC EB. This common framework is submitted within the common proposal for a CoBA, for regulatory approval. Therein it shall also be clarified whether Balancing Energy bids can be used for purposes other than Balancing.

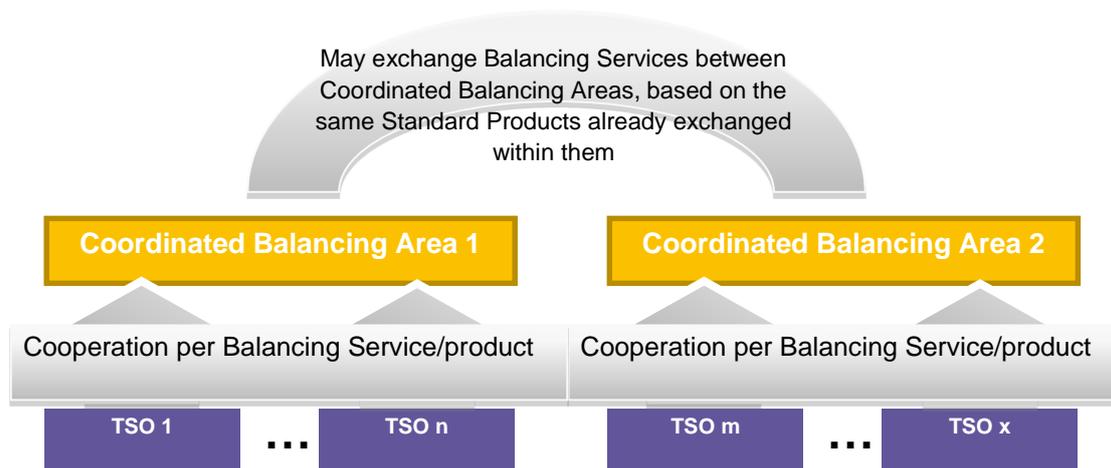


Figure 16: Model of CoBAs in NC EB

The requirements are based on the obligation to cooperate with one or more TSOs to provide an instrument for the integration of Balancing Markets, while each CoBA would be based at least on the Exchange of one or more Standard Products or the implementation of an Imbalance Netting Process, as defined in the procurement and optimisation section of this document.

An overview of the concept is shown in Figure 16: Model of CoBAs in NC EB. Flexibility is ensured by not specifying exactly which cooperation is to be carried out with which TSO, or that the Exchange of Balancing Capacity within a particular CoBA is mandatory. Furthermore it should be possible to exchange Balancing Services between two interconnected CoBAs in case these Balancing Services are already exchanged within the individual CoBAs.

Figure 17 shows the contrast between the mandatory concept of the CoBA for Standard Products for Balancing Energy and the optional concept for corresponding Standard Products for Balancing Capacity



Figure 17: Area Definition in Balancing: Coordinated Balancing Area

Once the NC EB comes into force, and the first CoBAs are formed, the concept will evolve from the initial formation of CoBAs corresponding to adjacent borders to a single Common Merit Order List and single pan-European CoBA. This would bring the proposed Balancing solutions in line with the FG EB European integration model and create a fully integrated and coordinated Balancing Market. This concept and its evolution are shown in Figure 18.

The implementation of the CoBA concept balances the very ambitious targets and deadlines prescribed in the FG EB with the flexibility needed to reach these targets. The flexibility is required to make the best use of experiences being gained from current Balancing cooperation projects and also from projects which will be implemented just after the NC EB comes into force. This approach of learning from experience while implementing the European integration model is important as there is little other experience available which is of relevance. The level of cooperation between TSOs is a crucial element to successfully implement the CoBA concept in a timely manner and thus to achieve the targets behind both the FG EB and the NC EB.

Article 11 – Extension and Merging of Coordinated Balancing Areas

The NC EB requires all TSOs to cooperate loyally in promoting the enlargement, merging, and creation of CoBAs for each Balancing product with a view to progressing to full Balancing Market integration. The process by which CoBAs expand can be a mixture of the following approaches:

- **Creation:** The CoBA concept allows for the creation of new CoBAs where no cooperation previously existed.
- **Cooperation:** Cooperation is a form of stepwise integration without prescribing the rules of cooperation between CoBAs. The subsequent step after such inter-CoBA cooperation would then be the merging of these CoBAs.
- **Merging:** The CoBA concept allows for the merging of two or more existing CoBAs into a new one for a given product.
- **Extension:** One method to fast track the integration of Balancing Markets is to expand the arrangement of established cooperation projects beyond the borders of the TSOs involved. A TSO which is outside a CoBA and not participating in an equivalent CoBA of the Standard Product, may join the cooperation by simply adopting the mechanisms and principles applied therein.

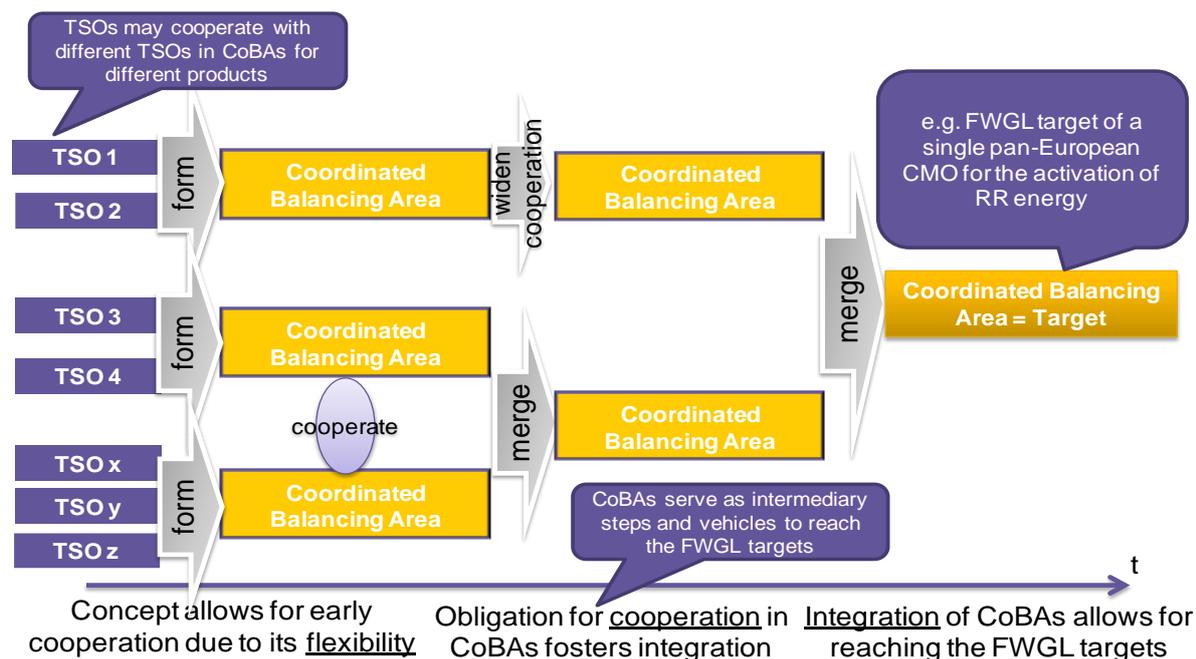


Figure 18: Evolution of the CoBA concept towards FG EB target

Based on this all TSOs of each CoBA shall cooperate closely in order to ensure that developments within the CoBA are consistent with the regional or European integration model. In the event that a TSO believes incompatibilities are emerging, these inconsistencies shall be reported to the Agency.

SECTION 2 MODELS FOR EXCHANGE OF BALANCING ENERGY FOR REPLACEMENT RESERVES

The targets in Articles 12 - 19 are set out in an Indicative NC EB Implementation Plan in Section 10.1.

Article 12 – Regional Integration Model for Replacement Reserves

This article sets out the ambitious targets for the development of the regional Balancing Markets and in particular for the Exchange of Replacement Reserves.

Article 13 – European Integration Model for Replacement Reserves

This article sets out the ambitious targets for the development of the pan-European Balancing Market and in particular for the Exchange of Replacement Reserves.

SECTION 3 MODELS FOR EXCHANGE OF BALANCING ENERGY FOR FREQUENCY RESTORATION RESERVES WITH MANUAL ACTIVATION

Article 14 – Regional Integration Model for Frequency Restoration Reserves with Manual Activation

This article sets out the ambitious targets for the development of the regional Balancing Markets and in particular for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation (mFRR).

Article 15 – European Integration Model for Frequency Restoration Reserves with Manual Activation

This article sets out the ambitious targets for the development of the pan-European Balancing Market and in particular for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation (mFRR).

SECTION 4 MODELS FOR EXCHANGE OF BALANCING ENERGY FOR FREQUENCY RESTORATION RESERVES WITH AUTOMATIC ACTIVATION

Article 16 – Regional Integration Model for Frequency Restoration Reserves with Automatic Activation

This article sets out the ambitious targets for the development of the regional Balancing Markets and in particular for the Exchange of Balancing Energy for Frequency Restoration Reserves with automatic activation (aFRR).

Article 17 – European Integration Model for Frequency Restoration Reserves with Automatic Activation

This article sets out the ambitious targets for the development of the pan-European Balancing Market and in particular for the Exchange of Balancing Energy for Frequency Restoration Reserves with automatic activation (aFRR).

SECTION 5 MODELS FOR IMBALANCE NETTING PROCESS

Article 18 – Regional Integration Model for Imbalance Netting Process

This article sets out the ambitious targets for the development of the regional Balancing Markets and in particular for operating the Imbalance Netting Process.

Article 19 – European Integration Model for Imbalance Netting Process

This article sets out the ambitious targets for the development of the pan-European Balancing Market and in particular for operating the Imbalance Netting Process.

SECTION 6 TARGETS FOR IMBALANCE SETTLEMENT

Article 20 – Targets on Imbalance Settlement

All TSOs shall harmonise both the main features for Imbalance calculation and Imbalance pricing. All TSOs shall also harmonise principles for the Imbalance Settlement Period subject to the results of Cost-Benefit Analysis.

SECTION 7 – FUNCTIONS AND RESPONSIBILITIES

Article 21 – Role of the TSOs

The role of the TSO, as described in this article, includes both TSOs operating Self Dispatch and Central Dispatch systems. For more details on Central Dispatch TSOs, see Article 27.

This article assigns the responsibility for procurement of Balancing Services from BSPs to the national TSOs themselves (rather than any other agency or organisation). To ensure a fair, transparent and non-discriminatory approach, it prohibits TSOs from offering Balancing Services themselves, except if their purpose is uniquely for System Security or if there are insufficient bids. Unanimous decision making rights are assigned to all TSOs within a CoBA or any other cooperation under the NC EB to reflect the responsibility for its own LFC Area that lies with each TSO and to ensure fairness and equal treatment among participants.

Article 22 – Cooperation with DSOs

This article underlines the necessity of cooperation of DSOs, TSOs and BSPs for ensuring efficient and effective Balancing. Furthermore, this article analyses the cost sharing scheme that should be applied due to possible short-term curtailments or limitations in the distribution grid according to Article 68 of the NC LFCR that could affect the provision of Balancing Services. In this respect, if no agreement regarding this issue is achieved between the corresponding TSO and the DSOs, or if there is no existing national law covering this matter, these costs would have to be borne by the corresponding DSO. Finally, this article establishes the obligation for DSOs to report to the TSO any limitation in the distribution grid according to the NC LFCR that could affect the provision of Balancing Services.

Article 23 – Role of Balancing Service Providers

This article deals with the obligation of Balancing Service Providers (BSPs) when offering services to the TSOs who will use these services to balance the system.

BSPs have to pass a pre-qualification test of the Connecting TSO in order to be able to participate to the procurement processes. Once qualified, BSPs must submit their service proposals prior to a deadline named procurement gate closure time. This procurement gate closure time can vary depending on a number of factors including product and location.

BSPs which have been selected in the procurement of Balancing Capacity are then obliged to submit the services for relevant volumes and time period they have been selected for. However, in addition to this requirement, any BSP can submit bids for Balancing Energy regardless of whether or not they have been contracted for Balancing Capacity or not. All the Balancing Energy bids have to be provided before a deadline which is close to real-time, namely the Balancing Energy Gate Closure Time.

Finally, as a general requirement, it is mandatory that for a given product the Reserve Providing Unit, Reserve Providing Group, Demand Units or aggregators and the associated BRP to be in the same Responsibility Area or Scheduling Area where appropriate.

Article 24 – Role of Balance Responsible Parties

In order to be balanced or help the system to be balanced according to the provision defined by the terms and conditions of each TSO, each Balance Responsible Party (BRP) shall be entitled to change its Position in the Intraday timeframe until the Intraday Cross Zonal Gate Closure Time basing on rules and criteria defined by its Connecting TSO. In this case each BRP is obliged to respect specific rules and criteria as defined in terms and conditions of each TSO. Any modification of the Position declared by the BRP shall be submitted to the Connecting TSO if specified in accordance with the terms and conditions by each TSO. TSOs shall not be obliged to accept a change of Position by a BRP after the Intraday Cross Zonal Gate Closure Time.

Some market designs rely on BRPs Positions being frozen prior to delivery; others allow for notifying intra-zonal trades after delivery which may help intermittent generation and Demand Side Response to participate in short time (bilateral) markets. TSOs that do not allow for ex-post notification are not obliged to do so and can continue current practice and those TSOs that do allow for ex-post notification are also allowed to continue current practice, even if it is not an obligation.

A BRP is financially responsible for the residual imbalances of its perimeter (portfolio) after the process explained above concerning the modification of Position.

TSOs are entitled to require BRPs to have a balanced Position after the day ahead process and this requirement would be included in the terms and conditions related to Balancing. This possibility is particular important for TSOs interacting with BRPs that only trade (i.e. have no portfolio of physical injections or withdrawals and hence no Allocated Volume). For those BRP's a balanced Position means that in their commercial trade schedules sales equal purchase. Without this requirement there would be volumes of energy unaccounted for in the system at this stage.

Article 25 – Functions in Coordinated Balancing Areas

This article outlines the functions and responsibilities in CoBAs. The details of the functions listed in first paragraph are detailed in other parts of the NC EB.

Each TSO, being part of its local market design area, is permitted to delegate any of the functions in this article to a competent third party in accordance with the article on delegation.

Article 26 – Terms and Conditions Related to Balancing

This article is required to detail how the terms and conditions related to all Balancing activities under the NC EB are to be established. These terms and conditions summarise all contractual relations between the TSOs and the BSPs or BRPs, respectively. This includes terms and conditions such as rules of Market Participants; rules for procurement and rules for settlement (e.g. deadline of finalisation of BRP and BSP settlements).

Their purpose is to set the principles and roles by which such Balancing activities will take place, and to ensure adequate competition based on a level-playing field between Market Participants. This article establishes the requirement for all parties to comply with the respective terms and conditions.

The timescales for implementation of the various parts of the NC EB require a step-wise approach to implementation.

Based on this common framework, each TSO of the CoBA is required to establish or adapt the terms and conditions inside its Responsibility Area or Scheduling Area when appropriate. Also, one TSO can be part of more than one CoBA. In this situation, each TSO is responsible for ensuring the consistency between the frameworks for the development of terms and conditions of the different CoBA and also between the consistency between the common frameworks and the terms and conditions to be applied in their Responsibility Area or Scheduling Area when appropriate.

The terms and conditions are established or adapted by the TSO in cooperation with other TSOs, with the relevant DSOs and other entities, and are subject to public consultation and submitted for regulatory approval. Also, the NRA is entitled to request a reassessment of the terms and conditions by the TSO.

Article 27 – Scheduling and Dispatch Arrangements

This article describes the process of acknowledging when a TSO is operating as a Central Dispatch system. To be classified as a Central Dispatch system a TSO has to apply to the relevant NRA and provide a description of the local market, scheduling and dispatch arrangements. The NRA shall verify if the tasks and responsibilities of a TSO are consistent with the definition of a Central Dispatch system and Integrated Scheduling Process and decide whether to acknowledge the TSO as Central Dispatch or not and to inform ACER of its decision. The application process has to be performed according to the same rules as approval processes described in Article 6.

Any TSO acknowledged as Central Dispatch may apply to stop being acknowledged as Central Dispatch TSO by following the same rules.

TSOs operating in Central Dispatch systems decide about the dispatch of the majority of units in each time period and may act as a BSP for their whole Responsibility Area subject to local arrangements. The scheduling and dispatch process usually starts the day before and continues up until real-time. This process is based on the bids submitted by Market Participants, requiring therefore rules for submission and modification of bids by Market Participants. Substantial changes of bids during the dispatching process might lead to sub-optimal dispatch and could expose TSOs and energy consumers as well as other Market Participants to very high costs. As Market Participants know in advance some results of the dispatch process (e.g. decision about start-up and shut down of units) they may use this knowledge to abuse market power e.g. by substantially changing the incremental/ decremental bid prices after obtaining information that their unit will be operating in any given hours of the following day.

Therefore, subject to NRA approval, Market Participants in Central Dispatch systems may be obliged to provide their bids sufficiently in advance in order for the TSO to include them in the Integrated Scheduling Process. The opportunity for Market Participants in Central Dispatch systems to subsequently modify their bids may also be limited in the terms and conditions.

Since TSO operating Central Dispatch systems start their internal processes earlier, they are entitled to activate their internal bids prior to the Balancing Energy Gate Closure Time on the basis of the results of Integrated Scheduling Process.

CHAPTER 3: PROCUREMENT OF BALANCING SERVICES

SECTION 1 GENERAL PROVISIONS FOR PROCUREMENT

Article 28 – Requirements for Standard and Specific Products

In order to allow an Exchange of Balancing Services, creation of Common Merit Order Lists and adequate liquidity, a standardisation of Balancing products is needed. NC EB lists the minimum set of standard characteristics, which define Standard Products for Balancing Capacity and Standard Products for Balancing Energy. The standard characteristics are a minimum set of product attributes that allow for the activation of products through a Balancing algorithm which uses the relevant Common Merit Order List. Besides this, standard characteristics seek to minimise the number of Common Merit Order Lists so as to maximise the participation of all Balancing resources and maximise the liquidity of Balancing Markets while respecting the needs of the TSOs for Balancing the system.

Based on the minimum characteristics detailed in the NC EB and possible additional ones, TSOs have to specify values or range of values for each of the characteristics of the product no more than one year after the NC EB comes into force, as specified by the FG EB. All TSOs are required to prepare a common proposal for Standard Products for Balancing Capacity and Standard Products for Balancing Energy, including all needed detailed specifications of the characteristics. It should be noted that these characteristics for Standard Products for Balancing Capacity and Standard Products for Balancing Energy will apply to bids and will be independent of connection type. They will facilitate the participation of load, energy storage, and generation including renewables, whether aggregated or not. In this way the participation of the widest possible range of BSPs is possible.

A process will be set forth in order to allow defining, reviewing and updating the list of Standard Products, which includes a public consultation with Market Participants, followed by a proposal from all TSOs to all NRAs and ACER. This approach provides the possibility to learn from and to consider previously gained experiences.

The following standard characteristics are considered as a minimum set of characteristics to define the Standard Products in line with the FG EB. See Figure 19 and explanation of the labelling below.

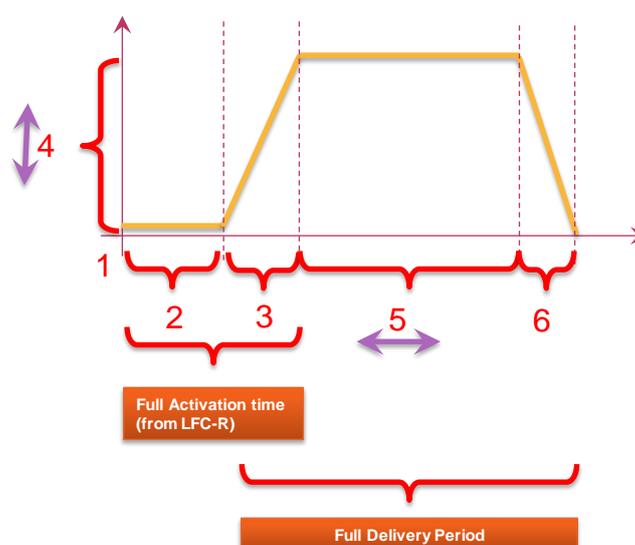


Figure 19: Standard Products for Balancing Capacity and Standard Products for Balancing Energy
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- (a) Minimum and maximum quantity – minimum and/or maximum quantity of single bids expressed in MW. (See item ④ in the Figure 19 above.)
- (b) Full Activation Time – the sum of ② Preparation Period and ③ Ramping Period
- ② Preparation Period – time required prior to start of delivery the first MW
 - ③ Ramping Period – time when the bid starts the physical activation, delivers the first MW and approaches the requested power of the TSO; expressed in seconds if the bid is not divisible and expressed in MW/s if the bid is divisible
- (c) Full Delivery Period – the sum of ③ Ramping Period; ⑤ Minimum and maximum duration of Delivery Period; and ⑥ Deactivation Period
- ③ Ramping Period (as described above)
 - ⑤ Minimum and maximum duration of Delivery Period – the time during which the BSP delivers the full requested power to the system
 - ⑥ Deactivation Period – the time from the start of physical deactivation of the unit until the full instruction MW has been delivered; expressed in seconds if the bid is not divisible and MW/s if the bid is divisible
- (d) Divisibility – the minimum divisible unit of Balancing Energy expressed in MW for the divisibility of volume and expressed in seconds for the divisibility of Delivery Period
- (e) Validity period – the period defined by a beginning time (hh:mm) and an ending time (hh:mm), when the bid could be activated. The Validity Period is at least the Full Delivery Period.
- (f) price of the bid – the price of Balancing Energy in €/MWh
- (g) Mode of Activation – manual or automatic
- (h) The minimal duration between the end of Deactivation Period and the following activation, which allows a time to recover the capacity to provide the service once again.

In application of these parameters the different categories of Balancing Capacity will have at least the following common characteristics:

Automatic Frequency Restoration Reserves:

- According to the NC LFCR requirements and as aFRR is used to restore frequency, Full Activation Time and deactivation period for Central Europe shall not be more than 15 minutes (900s), but can be shorter, depending of the needs of the TSOs in the CoBA. This time duration depends on the Synchronous Area as explained in NC LFCR.
- The minimum Delivery Period shall be as small as possible and 10s is a target.
- The maximum Delivery Period shall be equal to the Validity Period duration.
- Mode of Activation shall be automatic.
- The product shall be divisible (10s time step and 1 MW power step).

Manual Frequency Restoration Reserves:

- According to the NC LFCR requirements and as mFRR is used to restore frequency, Full Activation Time and deactivation period for Central Europe shall not be more than 15 minutes (900s), but can be shorter, depending of the needs of the TSOs in CoBA. This time duration depends on the Synchronous Area as explained in NC LFCR.
- Mode of Activation shall be manual.

Replacement Reserves:

- Full Activation Time and deactivation period shall be at least 15 minutes in Continental Europe.
- Mode of Activation shall be manual.

Nonetheless, if Standard Products as defined by all TSOs are not sufficient for a TSO to: (i) balance its area, or (ii) respect Operational Security, or (iii) enable the participation of resources that cannot be offered through Standard Products, then this TSO is allowed to define other products which are known as Specific Products. However, the priority is to define and use Standard Products.

The definition of Specific Products and volume should be transparent; shared with the NRA; and published in the annual report. Moreover they should not create inefficiencies or distortion of the market. These products do not necessarily fit with the characteristics of Standard Products and have to be adapted and shared with other TSOs when System Security is not compromised.

Article 29 – Conversion of Products

In this article, the methods and circumstances by which some Specific Products used by TSOs may be converted into Standard Products are described, for example, if they have better characteristics than Standard Products (e.g. shorter Activation Time). TSOs using such products shall be entitled to submit them into the common procurement of Balancing Services, after appropriately converting them.

The process of converting bids shall be fair, transparent and non-discriminating and shall not limit the Exchange of Balancing Services.

Article 30 – Modification of Bids in Central Dispatch Systems

This article stipulates that Central Dispatch TSOs are entitled to use bids, which were submitted for the purposes of Integrated Scheduling Process, in the process of the Exchange of Balancing Services. To make these bids compatible with Standard Products requirements while ensuring Operational Security, Central Dispatch TSOs are entitled to modify them before submission to the Common Merit Order List. After modification of bids, TSOs operating Central Dispatch systems have to follow exactly the same rules for bid submission as TSOs operating Self Dispatch systems (the same timeline, requirement to submit everything except unshared bids, activation rules, etc.).

The process of Integrated Scheduling Process bids modification in Central Dispatch systems is to be approved by relevant NRA, has to be transparent; and must ensure that its output reflect full possibilities of the Exchange of Balancing Services.

Article 31 – Balancing Energy Gate Closure Time

Balancing Energy bids submitted by a BSP shall be firm after the Balancing Energy Gate Closure Time. Any later change of Balancing Energy bids is permitted only with approval of all TSOs of the concerned CoBA. This approval could be done automatically via a set of pre-defined rules. An individual Balancing Energy Gate Closure Time is defined for each Balancing Energy product.

When a Balancing Energy product is activated by a TSO, even prior to Balancing Energy Gate Closure Time, the activated Balancing Energy product is firm and subject to TSO-BSP settlement.

Where a BSP cannot provide Balancing Energy bids through unforeseen circumstances, this should be reported to the TSO without delay and the bids should be marked as invalid.

The article allows for different treatment between schedule-based Standard Products and directly activated continuous Standard Products such as aFRR. For aFRR Balancing Energy bids, the Balancing Energy Gate Closure Time could be before the Intraday Cross Zonal Gate Closure Time to avoid respective merit order lists continually changing over time, (e.g. every 15 minutes) thus avoiding the resulting possibility of ongoing automatic upwards and downwards regulation be continually activated which would have led to the probability of a worse frequency control quality and a higher costs due to more frequent activation. This is based on current practice and best experiences from some TSO operating with aFRR over the last number of years. Furthermore the target BSP group for aFRR differs significantly to BSPs that can participate in mFRR and RR due to the pre-qualification criteria and product requirements set for aFRR. Thus participants of markets in parallel are not allowed to participate in aFRR markets and the liquidity of markets in parallel (e.g. intraday market) will be not endangered.

For Standard Products for Balancing Energy whose design is related to intraday market products and based on schedules (mFRR and RR) a time wise overlap of their markets shall be avoided and the markets shall be separated to foster the markets liquidity. Therefore the Balancing Energy Gate Closure Time shall be after the Intraday Cross Zonal Gate Closure Time for manually activated Balancing Energy bids and avoid cross zonal Intraday Market taking place at the same time

This article allows for different treatment of bids in Central Dispatch systems due to the local market methodology of including Integrated Scheduling Process bids in the Integrated Scheduling Process which can begin around the day ahead stage and continue up until real-time. For Integrated Scheduling Process bids which inherently incorporate Balancing Energy bids, the Integrated Scheduling Process Gate Closure Time is likely to be before the Intraday Cross Zonal Gate Closure Time to provide more certainty to TSOs who schedule and dispatch in an integrated way in order to optimise electricity market operation and transmission system operation and thus ensure economic efficiency.

Article 32 – Fall-back Procedures

Even if the different procedures and tools for procurement and activation of Balancing Services have a high reliability and availability, there could be cases where these can fail. This article requires TSOs to ensure that robust and timely fall-back solutions are in place to guarantee efficient, transparent and non-discriminatory functioning of the common procurement and activation of Balancing Services in the event that normal procedures fail.

In the event that the procurement of Balancing Services fails, TSOs may have an additional procurement process (e.g. second auction round) to achieve market-based contracting as much as possible. To ensure transparency, Market participants should be informed before TSOs use such fall-back procedures.

In case activation by using Common Merit Order Lists fails, TSOs are allowed to directly contact BSPs for activation of locally required Balancing Energy, in order to ensure System Security.

SECTION 2 PROCUREMENT OF BALANCING CAPACITY WITHIN A RESPONSIBILITY AREA

Article 33 – General Provisions

The NC EB aims to unify some basic rules on how the amount of Balancing Capacity as a result of dimensioning process of the NC LFCR is procured by harmonising certain rules for procurement of FRR and RR.

As a basic obligation the procurement should be done through a market-based method and should follow the general principles as specified at the beginning of the NC EB. Furthermore, in order to limit distortions between national procurement schemes, the duration of contracts for Balancing Capacity should be same regardless of whether the TSO commonly procure with other TSO(s) or not. Therefore, the NC EB allows a maximum duration of 12 months without regulatory approval for each TSO for procurement by a single TSO where the procurement is not part of a CoBA. Hence, if a TSO needs to conclude a contract for a longer period, then, the TSO has to gain an approval of a relevant NRA. This should be the case in areas with insufficient liquidity in shorter timeframes.

In addition to that and to increase possibility for the BSP to reflect operation related costs different per unit and direction the procurement shall be held separately for upward and downward Balancing Capacity. However, in some cases, as noted in the NC EB, the TSO can gain approval of relevant NRA to link upward and downward Balancing Capacity as well.

The article applies at least on FRR and RR. Because FCR is out of the primary scope of the NC LFCR is not specifically mentioned there. However, also procurement of FCR can follow rules of the NC EB. Most probably, the decision on procurement rules will be done by NRA on a case by case basis.

Article 34 – Transfer of Balancing Capacity within a Responsibility Area or Scheduling Area when appropriate

This article describes Transfer of Balancing Capacity within a Responsibility Area or Scheduling Area., i.e. only a Connecting TSO is taking actions.

In some cases a BSP cannot comply or does not want to provide a Balancing Capacity in accordance with the contract that it has entered into and committed itself to, e.g. caused by an unpredicted technical malfunction on its assets, or where it has a better opportunity to market its power etc. To increase market efficiency a BSP should have the option to fulfil or transfer its obligation without any punitive consequence for not delivering the service. In this respect, the TSO has to define a set of rules which, if they are abided, guarantee that the BSP can fulfil their obligation using another BSP or is able to transfer its obligation to another BSP, and not be penalised for non-delivery. However, given Balancing timescales are so close to real-time and because Connecting TSO could face the risk to the Operational Security of the system, it is necessary that the TSO must be involved in it.

General preconditions such as approval of a TSO and a delivery of a Balancing Capacity of the same quality for which the primary contract has been concluded are defined in the NC EB. However, it is foreseen that further details should be included in the terms and conditions related to Balancing.

SECTION 3 PROCUREMENT OF A BALANCING CAPACITY WITHIN A COORDINATED BALANCING AREA

Article 35 – General Provisions

It is of utmost importance to recognise that the Exchange of Balancing Capacity is an opportunity for a TSO(s) to procure part of its dimensioning requirement in another area (change of the geographical distribution of Balancing Capacity) and as such is not obligatory. Hence, if a TSO decides together with another TSO to commonly procure Balancing Capacity a CoBA needs to be established and stipulations of this article needs to be followed.

Exchange of Balancing Capacity is based on a concept of Exchange of Reserves defined in the NC LFCR. The Exchange of Reserves allows but does not oblige the TSO(s) of Area A to place part of their reserves (FCR, FRR or RR) within the Area B of other TSO(s) in order to ensure the provision of the required amount of Balancing Capacity. The Exchange of Reserves changes the geographical distribution of Balancing Capacity without changing the total amount of Balancing Capacity in the system. In contrast the concept of Sharing of Reserves allows the TSO(s) of an Area A and the TSOs of an Area B to rely on the same reserves (FCR, FRR and RR) in order to ensure the provision of the required amount of Balancing Capacity resulting from the dimensioning process. The Sharing of Reserves changes the total amount of procured Balancing Capacity but not the dimensioning incident sizing, thereby also impacting the geographical distribution.

The NC EB seeks to create the same basic rules for each BSP participating in the common procurement and requires procuring TSOs to cooperate and harmonise, to a certain level, for the rules and use of the same contract duration, timing, pricing and function performing the procurement. In parallel the same rules as for the “national procurement” – market-based method for procurement, possibility to link upward and downward Balancing Capacity, approval of longer contracts than one month upon regulatory approval – also applies.

In case TSO(s) perform the Exchange of Balancing Capacity, a Cross Zonal Capacity needs to be ensured. Chapter 4 includes description of the reservation of Cross Zonal Capacity, hence, Probabilistic Approach needs, at least, fulfil requirements of the NC LFCR.

The Capacity Procurement Optimisation Function is a function commonly used by TSOs to guarantee that lowest overall costs for all involved TSOs for the given procurement timeframe are ensured. When evaluating the offers from BSPs, the function considers not just price of offers but also Operational Security – ensure sufficient amount of Balancing Capacity to retain a Normal State while taking into account dimensioning requirements and limits as defined in the NC LFCR - and availability and price of Cross Zonal Capacity ensured for such purposes.

Article 36 – Transfer of Balancing Capacity within a Coordinated Balancing Area

This article describes Transfer of Balancing Capacity between different Responsibility or Scheduling Areas which are part of one CoBA, i.e. two or more TSOs are taking actions.

In addition to stipulations applicable for the Transfer of Balancing Capacity within a Responsibility Area or Scheduling Area, TSOs shall commonly verify security constraints, in particular, limits pursuant to the NC LFCR – limits for the concept of Exchange of Reserves or Sharing of Reserves and ensure the Cross Zonal Capacity. Further details should be commonly agreed by TSOs of the given CoBA and included in the terms and conditions related to Balancing.

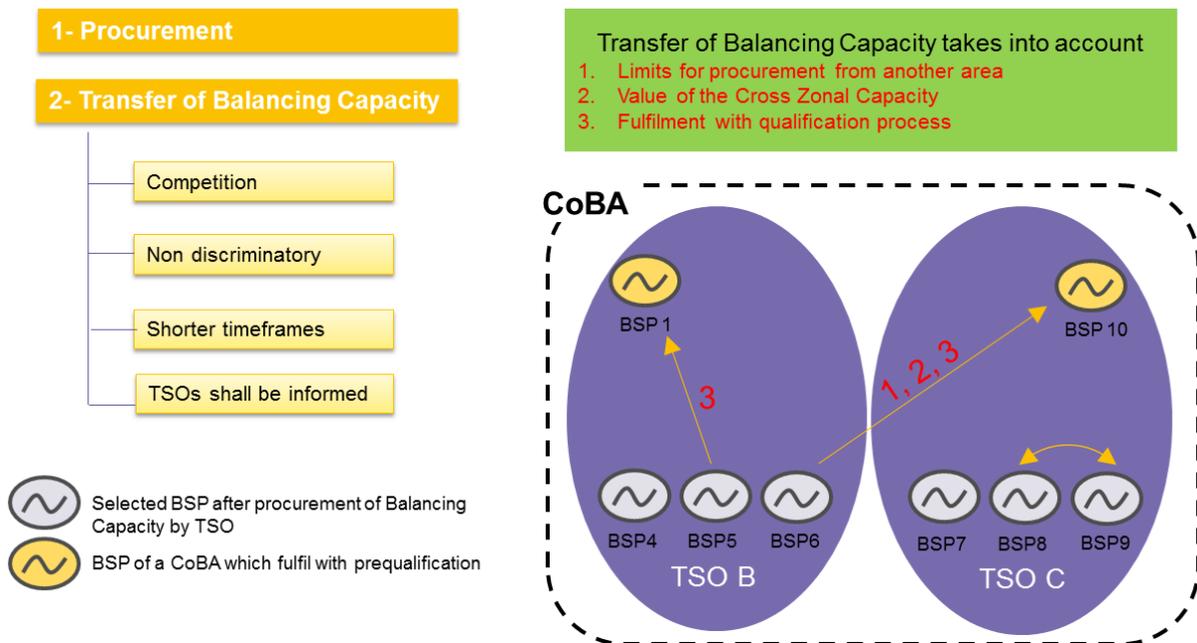


Figure 20: Transfer of Balancing Capacity

Article 37 – Exemption in the form of a TSO-BSP Model

Currently there are two role models related to cross-border procurement of Balancing Capacity: a TSO-TSO model and a TSO-BSP model (Where a BSP has a contractual relationship with another TSO than its Connecting TSO). It was decided that the European integration model for a future EU-wide Balancing Market should be based on a TSO-TSO model, where TSOs covers all cross-border processes and obligations (if not delegated to a third party).

To implement such model the NC imposes a set of rules which require adoption of the current processes and obligations and in addition to that creation and development of new ones. However, it is deemed necessary to allow current practises in a form a TSO-BSP model in cases where the Connecting TSO has not implemented a certain product process, for instance the Reserve Replacement Process, to allow cross-border exchange of this product.

TSOs and BSPs are in these cases, and upon exemption from national regulators, allowed to use a TSO-BSP model for a limited time period if the preconditions defined in the NC are respected.

SECTION 4 PROCUREMENT OF BALANCING ENERGY

Article 38 – General Provisions

The NC EB defines the process to determine the pricing mechanism for at least each Standard Product for Balancing Energy. The decision about pricing shall be taken by all TSOs by considering several

criteria including correct pricing incentives to Market Participants and markets of previous timeframes in addition to general objectives of the Balancing Market. The initial pricing method shall be based on marginal pricing (pay-as-cleared), unless detailed analysis demonstrates that a different pricing method is more efficient for EU-wide implementation. According to the FG EB, this proposal shall be submitted to ACER and all NRAs no later than one year after the NC EB comes into force.

Notwithstanding the common proposal submitted to ACER a possibility to apply a different pricing method is allowed for:

- a) TSOs of a CoBA providing a detailed analysis that demonstrates that this different pricing method is more efficient;
- b) any Standard Product for Balancing Energy that the TSO doesn't participate in a CoBA for this Standard Product.

The process of defining the pricing mechanism shall be coordinated with the process which defines harmonised Balancing Energy products.

SECTION 5 ACTIVATION OF THE BALANCING ENERGY BIDS

Article 39 – General Provisions

For the efficient activation of Balancing Energy, this article of NC EB foresees that TSOs of a CoBA define a common algorithm for the Activation Optimisation Function. This algorithm follows the principles described in the NC EB.

The volumes of Balancing Energy for each TSO must respect operational restrictions. Therefore the NC EB defines rules for how operational restrictions should be taken into account.

The activation of a bid is triggered by the algorithm of the Activation Optimisation Function. As the Connecting TSO is responsible for operating the grid and has real-time data for its area, the Connecting TSO is responsible for the direct physical activation of BSPs. Cross Zonal activation of a Balancing Energy bid will result in a firm reduction of the Control Target of the Requesting TSO, and a corresponding increase of Control Target for the Connecting TSO. The BSPs are then obliged to deliver the requested energy based on the amount and price submitted to the Common Merit Order List valid at the time of activation. Any deviation in activation from the algorithm of the Activation Optimisation Function will be regularly reported by TSOs to NRAs for transparency purposes.

As TSOs are responsible for submitting all necessary data (e.g. bids, energy flow measurements, operational status of power system) to the Activation Optimisation Function and for delivering the activated Balancing Energy to the border it is natural that TSOs have the direct control of the process for exchanging Balancing Energy.

The roadmap towards to the final target solution of a European-wide TSO-TSO Model with Common Merit Order List includes intermediate periods where it is allowed for TSOs not to share all bids. In the interim period the TSOs can learn how the Exchange of Balancing Services influences operation of the grid by sharing a limited amount of Balancing Energy bids. To foster a level-playing field, the NC EB describes the rules for defining the certain amount of bids that can be classed as “unshared bids”.

Furthermore it is stated in this article that a methodology for the activation purposes for Balancing Energy bids shall be defined 12 months after entry into force of the NC EB. Besides maintaining the active power balance, balancing energy bids might be used for other purposes, due to different national regulatory frameworks and operational concepts in the various control areas. Other purposes might be

redispatch. It is important that the activation purposes for every activated balancing energy bid is submitted to the Activation Optimisation Function and by this made visible for the other participating TSOs. By this, it is guaranteed, that the usage of bids for other purposes as for maintaining the active power balance is transparent and non-discriminatory. Activation of Balancing Energy bids for other purposes shall not determine the Imbalance Price or significantly affect System Security by leading to a violation of the criteria for reserve dimensioning. It is important that bids for aFRR are exclusively available for maintaining the active power balance and not for other purposes, amongst others due to their specific requirements and different way of activation.

Article 40 – Activation Mechanism of Balancing Energy

This article describes the Activation of Balancing Energy and the required steps for TSOs. The main goal is to assuring the most efficient way of activating Balancing Energy through a transparent, non-discriminatory, fair and objective process while taking into account technical and network constraints. It will be done by the Activation Optimisation Function based on Common Merit Order Lists. These Common Merit Order Lists will be established by TSOs for each Standard Product as defined in the NC EB and will be also separated for upward and downward bids.

These separations between Common Merit Order Lists are necessary in order to control the processes and can be considered to be the lowest level of optimisation. If there is the need to create more than one Common Merit Order List for a Standard Product for Balancing Energy then TSOs are also allowed to establish these lists. The reasons for this could be, e.g. the amount of bids that have to be processed, local needs of TSOs that otherwise could not be tackled without complicating the whole process and risking the performance of the process.

After establishing the Common Merit Order Lists the TSOs will use them as follows:

- The TSOs will send all the bids for each Standard Product they previously collected from BSPs within their Responsibility Area or Scheduling Area to the Activation Optimisation Function, which includes the Common Merit Order Lists. This has to be done up to the Balancing Energy Gate Closure Time as defined by TSOs based on the technical characteristics of the relevant Standard Product for Balancing Energy, e.g. depending on the activation time.
- After sending all the bids, each TSO will also send its activation request for Balancing Energy to that Activation Optimisation Function. The relevant Common Merit Order Lists are developed based on these bids, the technical characteristics of the requested Balancing Energy and request for Balancing Energy.
- After creating the Common Merit Order Lists, the Matching of the bids will be done automatically by the Activation Optimisation Function. The Matching includes as well the optimisation process of Cross Zonal Capacity.
- After the Matching, the TSOs will receive a confirmation of telling the TSOs which of its bids and offers are accepted. In respect of the accepted bids, the TSOs have to activate the relevant BSPs. The BSPs are obliged to deliver the relevant Balancing Energy.
- Once bids have been accepted, the TSOs have to know if the requested amounts of Balancing Energy will be delivered or if additional steps have to be undertaken by some TSOs to fulfil the individual security needs.

These functions have to at least take into account all relevant Balancing Energy bids and requests that are provided to the relevant Common Merit Order Lists by the TSOs. Also the available Cross Zonal Capacity have to be taken into account in order to allow for a firm delivery of the activated Balancing Energy.

As there might be an opportunity for TSOs to reduce the costs of activation of Balancing Energy by optimising the activation of different Standard Balancing Products in different Common Merit Order Lists, TSOs have the right to establish such global optimisation function. The major consideration for this global optimisation function is the consideration of the technical constraints of each Standard Product for Balancing Energy and their compatibility between. These might be e.g. different Activation Times (like it is e.g. for FRR and RR), different activation procedures (e.g. automatic and manual activation; directly or scheduled) and also the minimum time and/or maximum time a Balancing Energy product can be used.

EXAMPLE OF HOW THE BALANCING ENERGY IN A COMMON MERIT ORDER OF A COORDINATED BALANCING AREA IS AFFECTED

SCENARIO DESCRIPTION

As shown in Figure 21 CoBA AB and CoBA CD are two Synchronous Areas connected by a HVDC link. Area A and Area B cooperate on both the Exchange of Balancing Capacity and Exchange of Balancing Energy. Area C and Area D cooperate only on the Exchange of Balancing Energy.

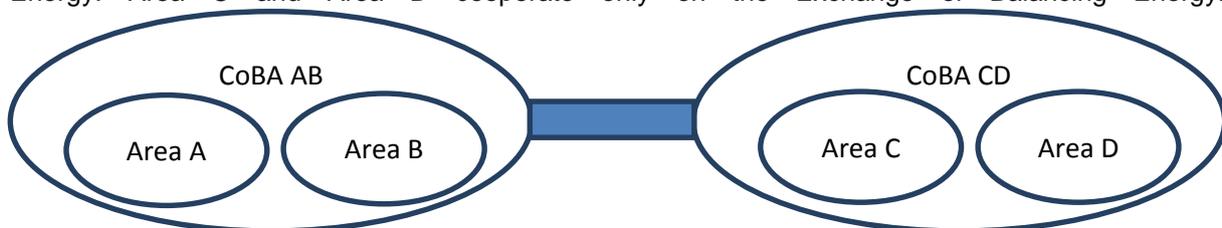


Figure 21: Coordinated Balancing Area Example

Activation of Balancing Energy in other Synchronous Areas is done by changing the flow on the HVDC link. One way of activating the Balancing Energy is that the activation signal from the LFC unit in the requesting area is sent simultaneously to HVDC link control and input to LFC unit (or a specific provider) in the connecting area. For the requesting area, activating Balancing Energy on HVDC link is just like activating any BSP in own area.

The table below considers how the Balancing Energy in a Common Merit Order List of a CoBA AB is affected.

	AREA A	AREA B	AREA C	AREA D
OBLIGATION	50 MW	50 MW	50 MW	50 MW
AVAILABLE BALANCING CAPACITY BIDS	200 MW	200 MW	200 MW	200 MW

For the actual period both Balancing Capacity and Balancing Energy are cheapest in Area B, and there is congestion between both Area A–Area B and Area B–Area C. Also both TSO in Area A and TSO in Area C have procured 25 MW of Balancing Capacity from Area B. The available transmission capacity for Exchange of Balancing Energy is 25 MW between both Area A–Area B and Area B–Area C.

Here are some options on how to ensure the availability of Balancing Energy bids from Area B to Area C without distorting the Common Merit Order List of CoBAs. There may be better alternatives. These examples just show that different combinations are possible.

a) Common Merit Order List of CoBA AB is fully available for TSO C

This means that Common Merit Order List for CoBA AB have at least 125 MW available - 100 MW in Area B and 25 MW in Area A. Activation Optimisation Function in CoBA AB is then using Common Merit Order AB in the normal way, including the constraint that just 25 MW Balancing Energy can be exchanged from Area B to Area A. Hence, there will still be at least 75 MW Balancing Energy left in Area B, where 25 MW of which is available for Area C. This structure would make it possible for TSO C to activate a bid in Area A as well. If the cooperation is on the same level within CoBA CD, the bids will be available for the whole CoBA CD.

b) The HVDC exchange is just a cooperation between TSO B and TSO C.

Only Balancing Energy bids from Area B are available for TSO C. Bids in Area B are available both in CoBAs AB and for TSO C. The constraint in the Activation Optimisation Function is that 25 MW in Area B must always be left for activation from TSO C. The solution in this example would be the same. (However in other situations there could be different solutions with alternative model a and b, as b does not allow TSO C to activate Balancing Energy in Area A at all). If cooperation is on the same level in CoBAs CD, Area C contributes 25 MW to the Common Merit Order of CoBA CD. TSO C also needs to have an optimisation function which always picks the cheapest bids. This can be complicated for TSO C, but if in a practical situation bids from Area B are the cheapest for 90 % of the time, simplified solutions could be feasible as well.

c) The reserve procured in Area B by TSO C is dedicated to certain providers

The bids from the BSPs that are dedicated to deliver Balancing Energy to Area C after the reserve procurement process will not be available on the Common Merit Order of CoBA AB. In CoBA CD TSO C may put these bids on the Common Merit Order of CoBA CD as any other bid from BSPs in Area C

CHAPTER 4 - CROSS ZONAL CAPACITY FOR BALANCING SERVICES

This chapter describes the relevant issues for enabling Exchange and Sharing of Balancing Services between TSOs. The Responsibility Area of each TSO is connected to the Responsibility Areas of other TSOs by tie lines or Interconnectors. Procurement of Balancing Services in different Responsibility Areas may be organised together with other TSOs into a CoBA. The Interconnectors between the Bidding Zones are usually used for energy market purposes and the transfer of energy that was traded by Market Participants. The implementation of the European Internal Energy Market will foster greater and more efficient use of these Interconnectors. In addition to using capacity on these interconnectors for the exchange of energy, this capacity will also be used for the Exchange of Balancing Capacity and Sharing of Reserves, for the Exchange of Balancing Energy as well as for Imbalance Netting.

As Cross Zonal Capacity are limited, they should be used for the purpose where they yield the largest benefit, which is achieved through market-based allocation up to Day Ahead and Intraday timeframes. After gate closure of the last cross-border market timeframe (intra-day), the capacity becomes available for use as Cross Zonal Capacity for Balancing purposes. NC EB defines the rules that allow TSOs to get access to this capacity by demonstrating a gain in Social Welfare while not endangering secure operation. This results in a sharing of the available Cross Zonal Capacity between Market Participants and TSOs.

Chapter 4 of the NC EB is therefore divided into 2 sections, one for issues related to Balancing Capacity and the other for issues related to Balancing Energy and Imbalance Netting.

SECTION 1 CROSS ZONAL CAPACITY FOR THE EXCHANGE OF BALANCING CAPACITY AND SHARING OF RESERVES

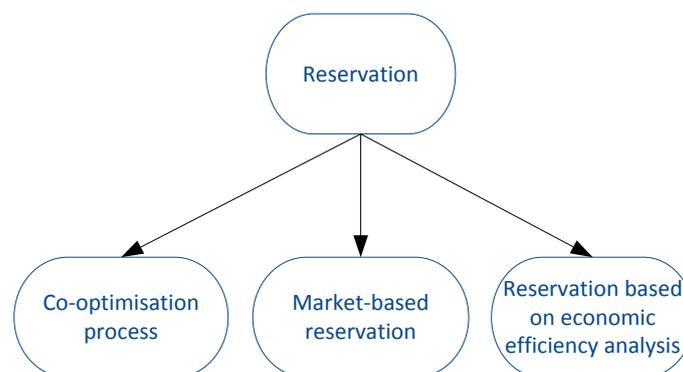


Figure 22: Alternative ways to reserve Cross Zonal Capacity

The above figure illustrates the alternative ways how TSOs can reserve Cross Zonal Capacity for the Exchange of Balancing Services. The possible methods are shown for Exchange of Balancing Capacity and Sharing of Reserves and are further described in the following explanations.

Article 41 – Reservation of Cross Zonal Capacity for TSOs

In order to enable TSOs to procure and use Balancing Capacity in an efficient, economic and market-based manner, there is the need to foster market integration, as described in the NC EB. This includes procuring Balancing Capacity also outside the TSOs area.

To guarantee the availability of Balancing Capacity procured outside the domestic Responsibility Area, there is the need for TSOs to obtain access to Cross Zonal Capacity. When the Probabilistic Approach is not sufficient TSOs can only ensure available Cross Zonal Capacity through reservation. In order not to interfere into market arrangements TSOs will only reserve Cross Zonal Capacity whenever this can be proven to be more efficient than the use for other market transactions. This can be done by comparing market values for Exchange of Balancing Capacity or Sharing of Reserves with market values for exchange of energy. The NC foresees three processes for this:

- 1) the co-optimisation process, which is detailed in Article 43.
- 2) the market-based reservation process, which is detailed in Article 44.
- 3) reservation based on economic efficiency analysis, which is detailed in Article 45.

When Cross Zonal Capacity is reserved for Balancing it is necessary to take that into account in calculations of Cross Zonal Capacity, as previously allocated Cross Zonal Capacity. That means that this capacity will not be available for other Market Participants. If the reserved Cross Zonal Capacity is no longer needed for Exchange of Balancing Capacity or Sharing of Reserves it shall be released, so it could be used by other Market Participants.

When Cross Zonal Capacity is reserved to enable Exchange of Balancing Capacity or Sharing of Reserves it is actually used independently any physical flow due to Exchange of Balancing Energy associated with the Exchange of Balancing Capacity or Sharing of Reserves. Hence the Cross Zonal Capacity nominated for Exchange of Balancing Capacity or Sharing of Reserves shall be exempted from the UIOSI and UIOLI principles.

Reserved Cross Zonal Capacity shall be used exclusively for the exchange of that kind of Balancing Capacity it was reserved for until it is released. If the Cross Zonal Capacity is released before Balancing Gate Closure Time it shall not longer be considered as previously allocated Cross Zonal Capacity. If the Cross Zonal Capacity is released in the Balancing timeframe it can be used for exchange of quicker Balancing Services or Imbalance Netting, if feasible.

As each method will define a value of Cross Zonal Capacity it should also be clear that the TSOs will have to pay that price, as any other Market Participant too. The price paid will be either the price settled in the capacity auction where the Cross Zonal Capacity is procured or the market value of Exchange of Balancing Capacity or Sharing of Reserves, as calculated by TSOs.

Article 42 – Calculation of Market Value of Cross Zonal Capacity

The market value of Cross Zonal Capacity is determined by price differences for different kinds or products on each side of the relevant borders. Today the market value is mainly based on products for the exchange of energy in normal energy markets. As the market coupling is developing further throughout Europe also other products, like Balancing products, should be taken into account. In order not to disturb the other markets, also for Balancing products a market-based solution should be used.

The easiest way is to simply compare the market values of each market to find the highest market values, what would indicate the highest welfare gains. These market values can be determined on different ways depending on the available information.

When real prices are available the best solution simply is to base the calculation on the market values on the real prices. The so called actual market value is calculated using available bids for Balancing products on the one hand or energy market products on the other hand. The bids for Balancing products will be delivered by BSPs while the bids for the energy market products are provided by market participants.

If bids for each one of the products are not available the prices for the products could also be forecasted. To avoid misinterpretations, transparent market indicators shall be the basis for these methods. That means the information for forecasting shall be available also for other market participants.

A special situation occurs in case of sharing of Balancing Capacity. Sharing of Reserves simply means that a TSO is not procuring a part of the needed amount of Balancing Capacity but instead having an agreement with another TSO that could support for that part in case the first TSO needs more Balancing Capacity as procured. That means for the first TSO that the procurement costs will be lower, not because of cheaper bids but because of not procuring. That difference needs to be taken into account while calculating the market value of Cross Zonal Capacity for Sharing of Reserves.

The above mentioned market values, the actual market value and the forecasted market value either for Balancing or for energy markets will be used in the methods that are described in the following articles.

Article 43 – Methodology of a Co-optimisation Process

In the co-optimisation process the TSOs participate in an ordinary Transmission Capacity Auction simultaneously with the procurement of Balancing Capacity. The bids of the TSOs in the Transmission Capacity Auction are based on the available Balancing Capacity bids on each side of the actual transmission line.

On the other side the market participants are bidding their expected market values in case of long term auctions or the real energy bids in case of implicit auction, like in day ahead markets. The following figure illustrates the relevant processes:

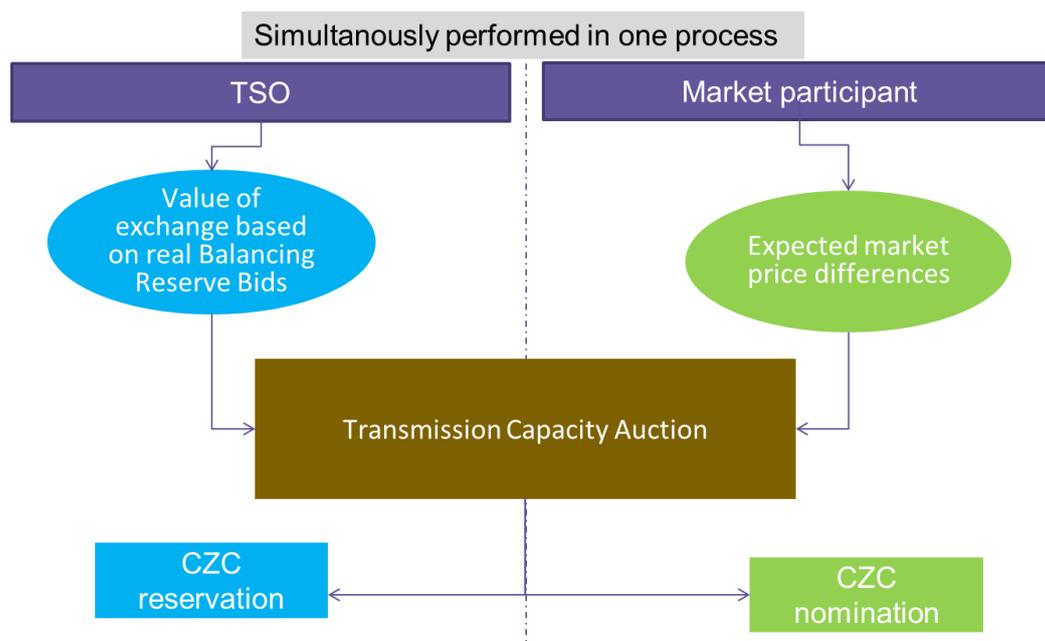


Figure 23: Reservation based on the Co-optimisation process

In the next step the Transmission Capacity Auction is running and is clearing all available bids for the Cross Zonal Capacity and allocating the Cross Zonal Capacity to the TSOs and/or the market participants, depending on the market values. Finally the TSOs would have to reserve that amount of Cross Zonal Capacity, and the market participants have to nominate it, in order not to lose it in the next auction timeframe. The details of this methodology need to be developed by TSOs and discussed with stakeholders and approved by NRAs.

Finally the methodology shall ensure an adequate pricing of the Cross Zonal Capacity and also shall ensure that the TSOs are paying the market price that was settled in the auction.

Article 44 – Methodology for a Market-based Reservation

If no transmission capacity auction is available for the relevant timeframe for procurement of Balancing Capacity or Sharing of Reserves the TSOs can perform the market-based reservation process or a finer granularity than available is needed to make efficient Cross Zonal Capacity reservation. In this process an analysis is done by comparing the actual market value for Exchange of Balancing Capacity or Sharing of Reserves with a forecasted market value for exchange of energy. Next to the calculation of the market value of Cross Zonal Capacity for Balancing Capacity, in this methodology, the TSOs also have to forecast the market value of the energy exchange. Therefore available information should be taken into account. The details of this methodology need to be developed by TSOs and discussed with stakeholders and approved by NRAs.

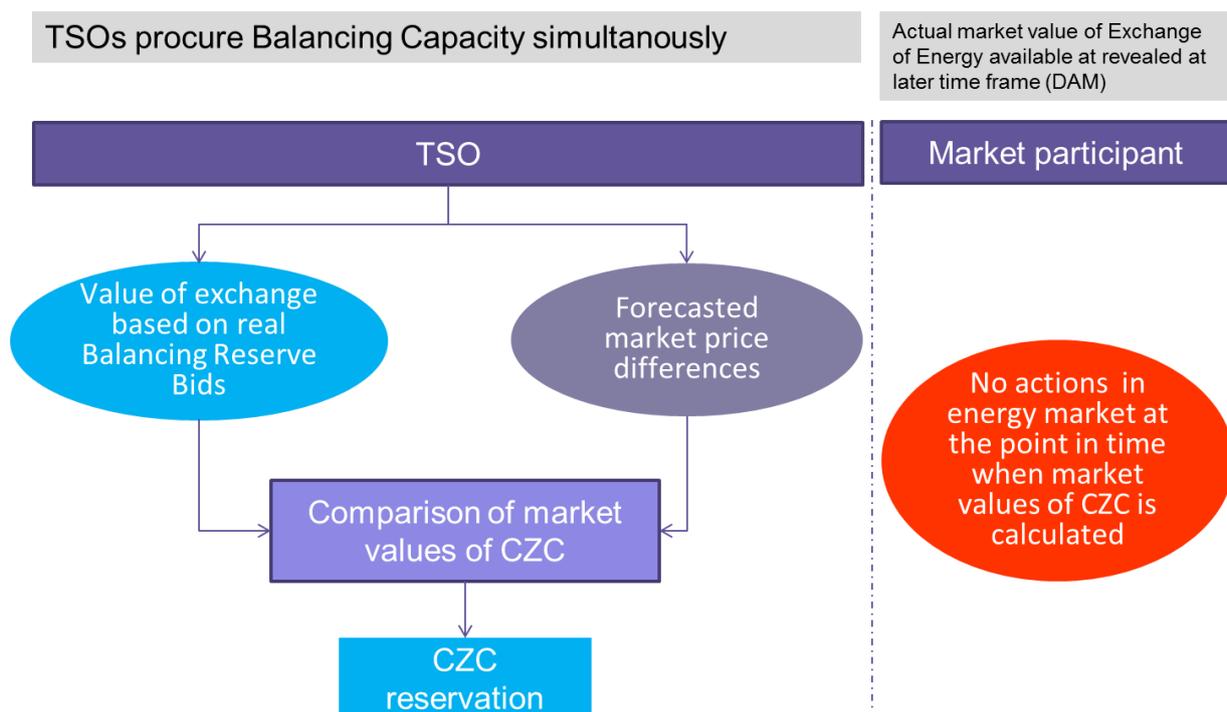


Figure 24: Market-based reservation

If both market values are calculated the TSOs will compare them and determine the possible allocation of Cross Zonal Capacity. The amount that would be allocated to TSOs should then be reserved by TSOs. Finally the methodology shall ensure an adequate pricing of the Cross Zonal Capacity and also shall ensure that the TSOs are paying a market-based price as calculated in the comparison.

Article 45 – Reservation based on Economic Efficiency Analysis

If it is not possible to calculate any actual market values for Exchange neither for Balancing Capacity nor for energy or Sharing of Reserves, an economic efficiency analysis can be performed.

In this methodology the TSOs also have to forecast the market value for Exchange of Balancing Capacity or Sharing of Reserves. Also that forecasting method has to be based on available information and to be developed later on by TSOs, discussed with stakeholders and approved by NRAs.

If both market values are calculated the TSOs will compare them and determine the possible allocation of Cross Zonal Capacity. The amount that would be allocated to TSOs should than be reserved by TSOs, as it is shown in the following figure.

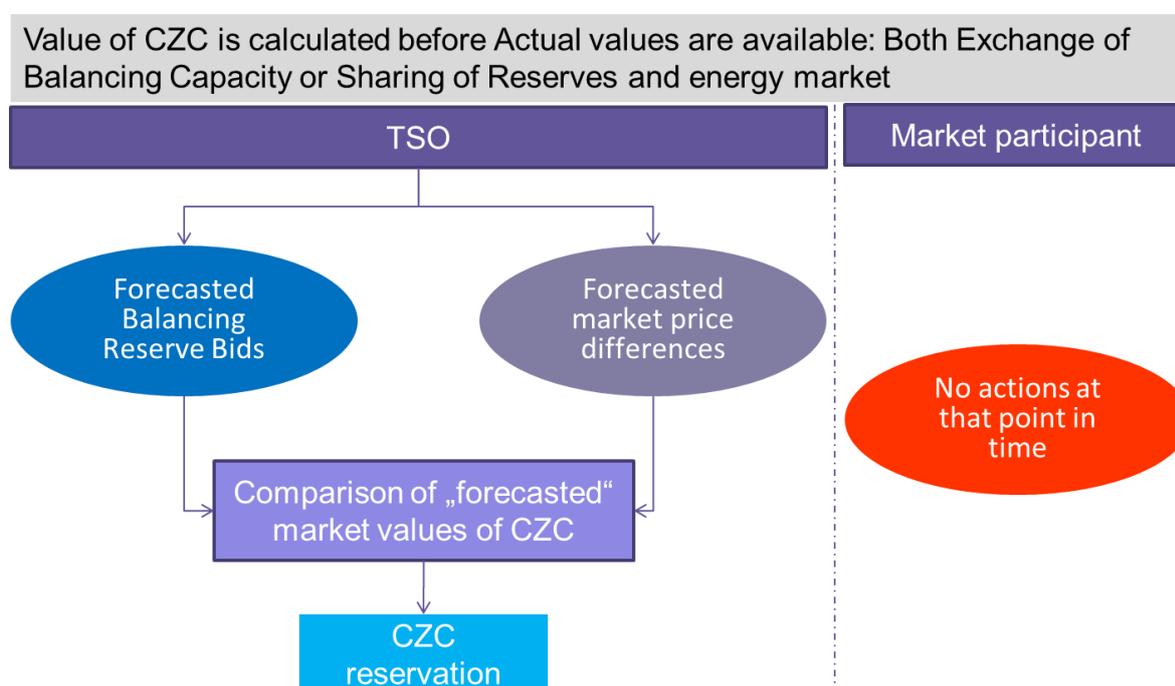


Figure 25: Reservation based on Economic Efficiency Analysis

Finally the methodology shall ensure an adequate pricing of the Cross Zonal Capacity and also shall ensure that the TSOs are paying a market related price as calculated in the comparison.

Article 46 – Reservation of Cross Zonal Capacity for Balancing Service Provider

As the NC also allows for a TSO-BSP Model it should also be allowed for BSPs to use Physical Transmission Capacity Rights (PTR) they have already procured in ordinary transmission capacity auctions. The BSP shall be allowed to reserve a part of that Cross Zonal Capacity as long as the BSP has the possibility to use that PTR, at the latest until the capacity calculation for the day ahead market starts. That deadline is important, as the PTRs that are not nominated until that point in time will be invalid and fall back to the capacity calculation (see NC CACM). If the BSP has reserved Cross Zonal Capacity the same rules as for TSOs shall apply. That means the Cross Zonal Capacity shall not be subject of any Use it or loss it or Use it or sell it principle. Also, if the Balancing Capacity the Cross Zonal

Capacity was reserved for, is not needed anymore, it shall fall back to the next capacity calculation and so be available for other actions and purposes.

SECTION 2 CROSS ZONAL CAPACITY FOR THE EXCHANGE OF BALANCING ENERGY OR IMBALANCE NETTING PROCESS

Article 47 – Use of Cross Zonal Capacity for the Exchange of Balancing Energy or Imbalance Netting Process

An Exchange of Balancing Energy or Imbalance Netting can only be done if Cross Zonal Capacity is available. That can be due to non-scarcity during the intraday market what results in available Cross Zonal Capacity after the intraday market that was not used by market participants for the exchange of energy. A second possibility is the usage of the Cross Zonal Capacity that was reserved for Balancing purposes as described in section 1 above. A third alternative is Cross Zonal Capacity that was reserved for Balancing purposes, but finally not used for an Exchange of Balancing Energy, and therefore was released for other purposes. The following illustration shows these three alternatives:

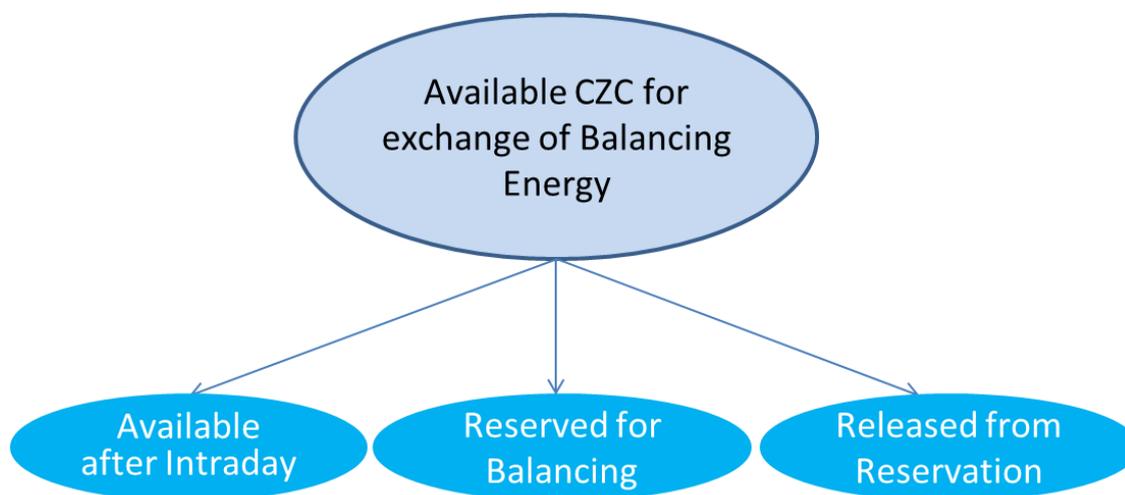


Figure 26: Available Cross Zonal Capacity

Article 48 – Calculation of Cross Zonal Capacity for the Exchange of Balancing Energy or Imbalance Netting Process

In order to allow the usage of Cross Zonal Capacity for Exchange of Balancing Energy or Imbalance Netting, as described above, it is necessary to develop a methodology that is always up to date on the available Cross Zonal Capacity. As a first step the available Cross Zonal Capacity after the closure of the intraday market needs to be taken into account or needs to be calculated and additionally already released Cross Zonal Capacity. The total amount of available Cross Zonal Capacity has to be updated whenever a transaction uses a part of it or when new Cross Zonal Capacity becomes available, be it on counter flows, further release of previously reserved Cross Zonal Capacity or any other reason. As a third parameter reserved Cross Zonal Capacity needs to be taken into account for the relevant Balancing products and could be used for the Exchange of Balancing Energy of that product or released if the activation is not possible anymore or not needed. The changes in the available Cross Zonal Capacity

shall be adjusted by TSOs immediately when changes occur, to allow an efficient use for other activations of Balancing Energy or Imbalance Netting.

If TSOs manage to create an improved capacity calculation for the Balancing Timeframe they are allowed to introduce this methodology after regulatory approval. While developing such a new method TSOs need to take into account the methods already used in former timeframes like day ahead and intraday, in order to avoid arbitrary effects between the markets.

Article 49 – Pricing of Cross Zonal Capacity for the Exchange of Balancing Energy or Imbalance Netting Process

Next to reserved and already paid Cross Zonal Capacity there could be Cross Zonal Capacity left after Intraday or released from reservation. The usage of this Cross Zonal Capacity also has a value. Currently the usage of Cross Zonal Capacity available after the day ahead markets is free of charge. But the NC CACM foresees that TSOs once may develop a pricing method for usage of Cross Zonal Capacity during intraday timeframe. In that situation TSOs are also allowed to develop a pricing method for usage Cross Zonal Capacity for Exchange of Balancing Energy or Imbalance Netting in a similar way to the method that will be introduced for the intraday market. That is necessary to avoid misuse and arbitrage in other markets and also reflects the value of the interconnectors and tie lines. It is also stated that next to possibly losses no other charges are allowed to be included in that price.

As such a method might change behaviour and strategies of market participants it should be developed until one year before its implementation to allow market participants to adapt their behaviour.

CHAPTER 5: SETTLEMENT

SECTION 1 SETTLEMENT PRINCIPLES (GENERALITIES)

Article 50 – General Settlement Principles

The NC EB shall take account of the objectives of the FG EB and of the requirements of the Electricity Regulation and the Electricity Directive, such as the need for establishing objective fair, transparent and non-discriminating rules for Balancing, in a cost-reflective way, and for creating appropriate incentives for network users and TSO's for efficient Balancing.

Amongst them is the requirement that a harmonised pricing method for Balancing Energy products shall give correct price signals and incentives to Market Participants.

Additional requirements are concerned with safeguarding Operational Security and that the specifications of the NC EB shall be consistent and take into account interactions with other market timeframes (e.g. Intraday, day ahead), that common principles are defined for the Procurement of Balancing Capacity and Balancing Energy to ensure that distortions within the internal market and in particular between adjacent markets that use different procurement mechanisms are avoided and with respect to Imbalance Settlement that there are limited distortions between adjacent markets induced by different settlement mechanisms.

Therefore the NC EB does not contain any articles inducing perverse incentives to any party involved (BRP, BSP, TSO, NRA), that may result in jeopardizing Operational Security or economic efficiency, or in exploitation by TSO's of differences in market designs.

When settlement mechanism involves more than one TSO (TSO-TSO Settlement), the rules must be commonly defined, and harmonised principles would be required. In this case, all the NRAs must approve the rules.

The NRA shall ensure the financial neutrality of the TSO with regard to the Balancing Energy settlements described in the NC EB. This means that a TSO should not be allowed to gain profit from any Balancing Energy settlement process, nor should a TSO be adversely impacted by such settlement results.

On the other hand, the provision of Balancing Capacity is necessary in order to comply with the requirements established in the NC LFCR and ensure the security of the systems. Moreover, in some systems, the costs associated to the provision of Balancing Capacity are nowadays partially included in the tariff scheme. Due to these reasons, and as the regulation of tariffs will be in place in the future, the settlement of the provision of Balancing Capacity is not included as a necessary part of the financial neutrality scheme. However this does not prevent that, depending on the national arrangements, some or all these costs for the provision of Balancing Capacity are also included.

TSO's are not allowed to use energy settlement results to cover the cost of congestion in their Responsibility Area.

TSO's are allowed to delegate some or all of the functions assigned to them in the NC EB to one or more third parties (Article 9); this therefore also applies to the settlements.

The following settlement processes are required in a European Balancing Market:

TSO to BSP: Implicitly mentioned in the FG EB: pricing method for Balancing Energy products)

- a. Settlement of the locally activated Balancing Energy (Section 2)
 - b. Settlement of the contracted reserves (Section 5)
2. Settlement between TSOs (Common Merit Order/Balancing function): Explicitly mentioned in the FG EB (Section 3)
- a. Settlement of intended exchange of LFC Area Imbalance due to activation on Common Merit Order List
 - b. Settlement of intentionally exchanged energy due to Imbalance Netting (Section 3)
 - c. Settlement of the Unintentional Deviations (FG EB) (Section 3)
3. TSO to BRP: Explicitly mentioned in FG EB
- a. Imbalance Settlement (Section 4)

All energy settlements involve:

- energy volumes (kWh, MWh)
- per specific time units (this would be the period of time used for calculating the volume of Balancing Energy to be settled. For example, for TSO-BSP energy settlements and for Imbalance Settlement, this period of time is the Imbalance Settlement Period)
- in a specific direction (positive for [relative] Injections, negative for [relative] Withdrawals) due to a specific process subject to settlement described in this NC (e.g. Imbalance Netting, FRR process, etc.),
- against a specific price, (local currency per MWh, e.g. €/MWh),
- to be settled between a TSO and a specific counterpart. (Central counterparty, BRP, BSP, another TSO)

The NC EB foresees that the rules for the settlement, as being part of the terms and conditions related to Balancing of each TSO, must be transparent, consulted, publically available and approved by the (relevant) NRA(s).

The NC EB engages TSOs for a fair distribution of costs and benefits derived from the settlement mechanisms. This could mean that, for example:

- In the case where financial asymmetry between TSOs due to the Exchange of Balancing Capacity and especially intended exchange due to Balancing is inevitable, compensation should be agreed between involved TSOs. If costs and benefits are unequally distributed a fair distribution should be carried out through a TSO-TSO settlement. Examples are e.g. TSO's that encounter transits through their Responsibility Area, and are faced with different Ramp Rates at different Interconnectors; TSO's that due to Balancing Processes no longer have to activate Balancing Energy Bids within their Responsibility Area, and hence are not confronted with control inaccuracies that may lead to unintended exchange of energy between TSO's.
- The impact of pricing on national settlement mechanisms must be also taken into account (for example the consequences of having marginal or pay-as-bid in the Common Merit Order platform and/or internal settlement scheme).

In order to calculate the unintended exchange of energy, all components of intended exchange of energy have to be identified (and settled). Additional components of TSO-TSO intended exchanges of energy due to e.g. due to ramping restrictions as defined in NC LFCR on cross-border schedules, due to Frequency Containment Processes within a Synchronous Area as described in NC LFCR, or due to emergency measures in not-normal operating conditions.

All withdrawals and all injections shall be subject to balance responsibility. Withdrawals and injections from Interconnectors however cannot be covered by BRP and are subject to TSO-TSO settlement.

SECTION 2 SETTLEMENT OF BALANCING ENERGY WITH BALANCING SERVICE PROVIDERS

Article 51 – General Principles for Balancing Energy

This article deals with the settlement of each of the processes described in the NC LFCR: FCR, FRR, RR, thus making it optional but not necessary to use the same prices for all three processes

BSPs shall be entitled to challenge its Balancing Energy Settlement according to a procedure to be developed by the TSO because transactions are firm,

- a) settlement is always performed separately per direction, so there will be no netted volumes to be settled with BSPs, and
- b) the volumes of energy to be settled will be determined according to Terms and Conditions related to Balancing.

Common principles reflect the geographical area over which the volumes and prices will be determined, and the time periods over which the volumes and prices will be calculated.

The settlement between TSO and BSP of energy from FCR (Art 52) is left optional in the NC EB due to potentially small volumes of capacity and activated energy and the possible difficulties for measurement associated to the FCR process.

This settlement of Balancing Energy from the obligatory Frequency Restoration Process (Art 51) is obligatory.

The settlement of Balancing Energy from the non-obligatory Reserve Replacement Process (Art 52) is only applicable for where this process is implemented.

Article 52 – Balancing Energy for Frequency Containment Process

This article describes the settlement of Balancing Energy from Frequency Containment Process which is optional. The only obligation is to define the price of Balancing Energy from Frequency Containment Reserves for each direction.

Article 53 – Balancing Energy from Frequency Restoration Process with Manual Activation or Automatic Activation

This article describes the settlement of Balancing Energy from Frequency Restoration Process. The general principles described in Article 51 will apply.

Article 54 – Balancing Energy for the Reserve Replacement Process

This article describes the settlement of Balancing Energy from Reserve Replacement Process. General principles described in Article 51 will apply.

Article 55 – Imbalance Adjustment to the Balance Responsible Party

When Balancing Energy bids from a BSP have been activated, the net volumes of Balancing Energy from these activations will be reflected as an adjustment in the calculation of the Imbalance of the BRPs that have been nominated to be associated with the BSP as required under the article dealing with terms and conditions related to Balancing, at least at a Balancing Energy bid level.

Adjustment is a prerequisite for the functioning of the Balancing Market. The rationale for considering the Imbalance Adjustment is to ensure that the Imbalance is calculated correctly. For example, assuming that a BRP is balanced initially, the delivery of the requested volume would, without adjustment, result in an Imbalance for the BRP.

In case of an adjustment based on the requested volume, only exact delivery of this requested volume would not result in Imbalance. In case however of determination on metered volumes additional instruments are needed to penalize non-delivery.

The relation between the BSP, responsible for the bidding, and responsible for delivery of Balancing energy on request by the TSO, and the BRP financially responsible for the Imbalance, is in principle a market arrangement, without financial involvement of the TSO.

SECTION 3 SETTLEMENT OF EXCHANGES BETWEEN TSOs

TSO-TSO settlement is the first mechanism that is implemented on a pan-European scale, extending beyond CoBAs. It will be defined within two years after the NC EB comes into force, covering settlements for both exchanges within Synchronous Areas and between Synchronous Areas resulting from:

- (a) intended exchanges of energy, and
- (b) unintended exchanges of energy.

Article 56 – Intended Exchanges of Energy

This article refers specifically to intended energy exchanged. Intend energy exchanges include energy exchanged during frequency events as the occurrence of such events is planned for. Consequently, if energy flows during such an event it is 'intended' and thus settled as intend exchange of energy. Intended exchange of energy between TSOs can be at a CoBA level, on Synchronous Area level or between TSO's, and separates between processes within a Synchronous Areas and between Synchronous Areas.

This article lists the processes which are handled by this category of settlement as follows:

1. Imbalance Netting Process
2. Frequency Restoration Process with manual activation
3. Frequency Restoration Process with automatic activation
4. Reserve Replacement Process;
5. The energy associated with the ramping (applicable between TSOs in the same Synchronous Area)

6. The energy associated with HVDC ramping (applicable between TSOs in different Synchronous Areas)
7. Frequency Containment Process in the same Synchronous Area
8. Frequency Containment Process between Synchronous Area

In order to ensure proper functioning of cross-border Balancing Market, all intended exchanged of energy due to Balancing shall be settled among relevant TSOs cooperating within an area. For all these processes the relevant TSO's shall development common rules for settlement. This pricing methods associated with settlements will appropriately reflect overall benefits arising from avoidance of counteracting activation of Balancing Energy through the Imbalance Netting Process and to encourage TSOs to participate in this process.

For settlement between Synchronous Areas across HVDC links, a common methodology for settlement for all links could prevent arbitrage between separate links (i.e. where we have HVDC A-B and HVDC A-C, the same rules might apply to both links).

Also, following the common principles of non-discrimination of the settlement mechanisms, these common rules for the settlement of intended exchanges of energy between TSOs should guarantee a fair distribution of the overall costs and benefits in the systems involved.

Article 57 – Unintended Exchanges of Energy

The term unintentional deviations as used in FG EB describes power deviations, whereas settlement refer to energy volumes; hence the term unintentional deviations is not used, to avoid ambiguities, and instead unintended exchange of energy is used in NC EB.

All unintended exchange of energy shall be settled financially. However, the settlement rules and processes for settlement of unintended exchange of energy may vary depending on whether the process is performed within one Synchronous Area or between Synchronous Areas because the causes of the deviations can be different.

Within a Synchronous Area, the unintended exchange of energy settlement mechanism shall give adequate price signals to TSOs to be balanced. Therefore energy from unintended exchange of energy shall be the most expensive Balancing Energy which could be obtained by TSOs, in order to prevent free riding behaviour of one TSO at the expense of others.

Unintended exchange of energy between Synchronous Areas often result from technical parameters, control inaccuracies or tripping on HVDC links, and should be settled according to other rules than the unintended exchanges of energy within Synchronous Areas.

TSO-TSO settlement is the first mechanism that is implemented on a pan-European scale, extending beyond CoBAs. This essential step towards a European Balancing mechanism will be defined within two years after the NC EB comes into force.

SECTION 4 IMBALANCE SETTLEMENT

This section describes how the Imbalance for each BRP is calculated according to the definition of Imbalance from the Framework Guidelines. The Framework Guidelines themselves define Imbalances as *deviations between generation, consumption and commercial transactions (in all timeframes – commercial transactions include sales and purchases on organised markets or between BRPs) of a BRP within a given imbalance settlement period.*

All withdrawals and injections shall be covered by a BRP in accordance with the FG EB requirement to have no exemptions. For clarity, this includes injections from renewable and intermittent resources. Withdrawals and injections from Interconnectors however cannot be covered by BRP. The Imbalance determined at the Imbalance Area level; Imbalance prices are determined at the Imbalance Price Area level. Each BRP is financially responsible for the Imbalance of all withdrawals and injections covered by this BRP. Each BRP shall provide all necessary data and information needed by the TSO/DSO to evaluate Balancing Service needs. BRPs shall be entitled to challenge its Imbalance calculation.

Any curtailments of commercial transactions on all timescales on organised markets or between BRPs, as performed by a TSO under abnormal operating conditions will also be an adjustment in the Imbalance calculation. An Imbalance Price shall be calculated for each direction, these prices may however be the same, thus allowing the possibility of both single pricing and dual pricing.

In order to disincentivise aggravation of the system Imbalance, the Imbalance Price for Imbalances aggravating system Imbalances should at least be related to the average price of Balancing Energy activated within the area. The rationale for average price here is that in marginal pricing the average price *is* the marginal price, and the present wording allows for the marginal price being used not to be the marginal pricing. The pricing of the other direction is left to the TSO (may be the same, thus enabling single price system). This fulfils the intention of the Framework Guidelines to give correct price signals and incentives to Market Participants while also take into account the regional specificities of different electricity market designs.

A separate provision has to be made when no Balancing Energy has been activated. This is not uncommon for systems that practice Imbalance Netting Process.

Article 58 – Imbalance Settlement Period

In this article, the NC EB establishes a step-by-step process for the harmonisation of the Imbalance Settlement Period. The significance of the length of the Imbalance Settlement Period should not be underestimated. It impacts on the Imbalance Pricing methodology (i.e. single or dual); on the Balancing processes required (use of RR or not); on the Balancing Energy products (e.g. scheduled, pure energy products or only direct activated power products); and on the volume calculation (request or metered).

This process starts with a Cost-Benefit Analysis for the harmonisation of the Imbalance Settlement Period, carried out by ENTSO-E, as required by the FG EB. This analysis shall take into account the requirement that the Imbalance Settlement Period must not be greater than 30 minutes. The results of this analysis are then submitted to all the NRAs and to ACER.

According to the results of the Cost-Benefit Analysis, the NRAs will propose a target date for the implementation of the Imbalance Settlement Period in each system and the time line must allow enough time for implementation on all levels. As the settlement features (including Imbalance Settlement) are part of the terms and conditions related to Balancing, this date has to be consistent with the date of applicability of the terms and conditions in each system.

In line with the provisions established by the FG EB in Chapter 5.3, the NC EB also allows for a TSO to apply for a longer Imbalance Settlement Period than decided by all the NRAs. In this case, the TSO must provide its NRA with a detailed Cost-Benefit Analysis and the NRA will decide on the approval.

Also, notwithstanding the results of harmonisation, those systems and markets currently operating on Imbalance Settlement Periods of 15 minutes will not be forced to go back to 30 minutes.

Article 59 – Imbalance Calculation

This article describes how the Imbalance for each BRP is calculated from three volumes (a notified position, an allocated value (based on realized values), and an adjusted volume).

BRPs shall be entitled to challenge its Imbalance calculation according to a procedure to be developed by the TSO.

This article describes how the Imbalance for each BRP is calculated according to the definition of Imbalance from the Framework Guidelines. The Framework Guidelines themselves define Imbalances as deviations between generation, consumption and commercial transactions (in all timeframes – commercial transactions include sales and purchases on organised markets or between BRPs) of a BRP within a given imbalance settlement period.

Any curtailments of commercial transactions on all timescales on organised markets or between BRP's, as performed by a TSO under not normal operating conditions will also be an adjustment in the Imbalance calculation. An Imbalance Price shall be calculated for each direction, these prices may however be the same, thus allowing for single pricing.

The sum of the trades of a BRP (buy and sell) to others should match the net energy infeed/withdrawal over the connections for which the BRP carries responsibility. In order to assess this, the following volumes are therefore defined:

- A notified Position (scheduled position) reflecting the final net volume of commercial transactions on all timescales on organised markets or between BRP's, or where appropriate the scheduled injections and withdrawals.
- An allocated value (usually based on metered values or profiled values), reflecting the net volume of realized physical generation and consumption over the connections for which the BRP is responsible.
- An adjusted volume reflecting the Activation of Balancing Energy bids associated with this BRP, at least at Balancing Energy bid level.

The article prescribes to all TSO's to establish a procedure to determine each of these three volumes.

For BRPs that do not cover any injections or withdrawals (as a pure trader could be) the step to calculate the Allocated Volume is not needed, as this volume will be zero by definition. For simplicity purposes, the NC states that the Allocated Volume for this kind of BRP shall not be calculated (which would be effectively the same as saying that this volume is zero).

The article defines the directions of the Imbalance.

The Imbalance has a geographical aspect: the area in which an Imbalance is calculated and the area in which an Imbalance Price is calculated.

For most TSO's its Responsibility Area coincides with 1 Scheduling Area and 1 Bidding Zone; in these cases the Imbalance and Imbalance Price relate to this Bidding Zone.

For a number of TSO's however there are differences between Bidding Zone and/or Responsibility Area and/or Scheduling Area.

In those cases the TSO may have to assign Imbalance Price Areas and Imbalance Area that may not coincide with Bidding Zones.

Article 60 – Imbalance Price

This article describes the principles of the pricing of the Imbalances to be settled by the TSO with the BRPs.

All Imbalances will be settled in each direction i.e. the BRP has either a shortage or a surplus; if a BRP has no Imbalance the result of the Settlement will be 0 EUR, irrespective of price.

There must be a relation between the Imbalance Price and the price of activation of Balancing Energy by the TSO, to avoid free riding of a BRP, and conversely to avoid free riding behaviour of a BSP.

The FG EB prescribe this relation to be based on Marginal Pricing. Depending on the settlement of Balancing Energy with the BSP (marginal or pay-as-bid, approach may differ yet per TSO), NC EB has chosen a pragmatic approach describing only minimum conditions for some Imbalance Prices. The situations show in figure 27 have to be covered.

Potential States		Imbalance BRP		
		short (-)	0	long (+)
Balancing Energy requested by TSO	no -, no +			
	-, no +			
	+, no -			
	both +, -			

Figure 27: Potential States

Current designs feature two different Imbalance Pricing concepts: Single and Dual Pricing. The reference price is to be established by the TSO in either direction; it can be the same for all situations or not, it can be derived from a market in another timeframe like day ahead, or intraday, or it can be derived from a MOL: if the marginal price is the price of the last one to be activated, then the reference price for no activation whatsoever could be the average price for the first bid on each side.

Single Pricing		Imbalance BRP			Dual Pricing		Imbalance BRP		
		short (-)	0	long (+)			short (-)	0	long (+)
Balancing Energy requested by TSO	no -, no +	reference		reference	Balancing Energy requested by TSO	no -, no +	reference		reference
	-, no +	marginal -		marginal -		-, no +	reference		marginal -
	+, no -	marginal +		marginal +		+, no -	marginal +		reference
	both +, -	marginal -		marginal -		both +, -	marginal +		marginal -
		marginal +		marginal +			marginal +		reference
		reference		reference			reference		marginal -

Figure 28: Single and Dual Pricing

In case of both + and – Balancing Energy requested by TSO a choice must be made for one of three possibilities; either a static (always the same) or a dynamic (dependent on volumes, or other parameters) choice is possible.

These different pricing schemes determine incentives to the behaviour of a BRP, depending on the BRP's ability to change its Position, and its knowledge of its own, current, Imbalance:

Single Pricing		Imbalance known to BRP		
		short (-)	0	long (+)
Balancing Energy requested by TSO	no -, no +	reference		reference
	-, no +	marginal -		marginal -
	+, no -	marginal +		marginal +
	both +, -	marginal -		marginal -
		reference		reference

Single Pricing		Imbalance unknown to BRP		
		short (-)	0	long (+)
Balancing Energy requested by TSO	no -, no +	reference		reference
	-, no +	marginal -		marginal -
	+, no -	marginal +		marginal +
	both +, -	marginal -		marginal -
		reference		reference

Dual Pricing		Imbalance known to BRP		
		short (-)	0	long (+)
Balancing Energy requested by TSO	no -, no +	reference		reference
	-, no +	reference		marginal -
	+, no -	marginal +		reference
	both +, -	marginal +		marginal -
		reference		reference

Dual Pricing		Imbalance unknown to BRP		
		short (-)	0	long (+)
Balancing Energy requested by TSO	no -, no +	reference		reference
	-, no +	reference		marginal -
	+, no -	marginal +		reference
	both +, -	marginal +		reference
		reference		marginal -

Legend
 Up
 Down
 Back
 Stay/Unclear

Figure 29: Incentives with different pricing schemes

The major difference is that for BRP's having some flexibility in their portfolio, that in dual pricing they can only use it when their own situation is known, and only to the extent of reducing their own Imbalance.

In single pricing BRP's can use this flexibility, regardless of knowing their own position; however, in this case the drawback might be an uncontrolled overreaction.

The present draft contains only the price conditions referring to situations in which BRP aggravates the Imbalance:

Present Draft		Imbalance BRP		
		short (-) BRP pays not less	0	long (+) BRP receives not more
Balancing Energy requested by TSO	no -, no +	avoided		avoided
	-, no +	undefined		average -
	+, no -	average +		undefined
	both +, -	average +	one of these	undefined
		undefined		average -
		average +		average -

Figure 30: Principles set out in the NC EB

The use of average instead of marginal still allows for marginal, due to the provision "not less", respectively "not more". Anyway in the case of marginal pricing for Balancing Energy, the average price equals the marginal price. The provision "not less", respectively "not more", imply that it is possible to add penalties for BRP's aggravating system imbalance.

Article 61 – Imbalance Settlement

This article clarifies that these settlements of Imbalance are to be performed by the TSO with each BRP, for each Imbalance Settlement Period and using the appropriate Imbalance Price.

SECTION 5 SETTLEMENT OF BALANCING CAPACITY

Article 62 – Procurement of Balancing Capacity within a Responsibility Area

Each TSO, using Balancing Capacity bids to procure reserves, must perform the settlement for all the BSPs (associated with a BRP inside its Responsibility Area) that have provided Balancing Capacity products to the TSO (either for internal use, or for Exchange or Sharing within a CoBA).

The rules for this settlement will be defined by the TSO (as part of the terms and conditions related to Balancing) and will be transparent and published.

Article 63 – Procurement of a Balancing Capacity within a Coordinated Balancing Area

This settlement must allow for all the possible mechanisms of Exchange of Balancing Capacity which are permitted by the FG EB (but not obligatory) inside a CoBA.

If applicable, the TSOs will settle among themselves the Balancing Capacity products exchanged in the CoBA (or through the TSO-TSO Settlement Function), and then each TSO will perform the internal settlement accordingly with its BSPs.

The rules for the settlement of Balancing Capacity between TSOs will be common and will be defined in a coordinated manner between all the TSOs involved and shall be transparent and published.

Also, the settlement between TSOs must be consistent with the results from the Common Merit Order List for the corresponding Balancing Capacity product.

SECTION 6 SETTLEMENT AMENDMENTS

Article 64 – General Principles

The purpose of introducing principles for amendments in the NC EB is to allow for a possibility of the parties involved in the settlement to amend measurements and reports in circumstances where, for some reason, these were incorrectly measured or were incorrectly reported. In order to be able to close the settlement at some point in time there shall be a maximum time period in which amendments are allowed.

CHAPTER 6: ALGORITHM

This Chapter details the general requirements for the development of algorithms. These algorithms are operated by the respective functions (established in Article 25) performing the optimisation of Imbalance Netting Function; Reserves Procurement Optimisation Function; Transfer of Reserves Function; Activation Optimisation Function; and TSO-TSO Settlement Function where these are performed commonly in a CoBA.

Article 65 – Algorithm Development

This article requires all TSOs to establish the principles which have to be followed in the development of the relevant algorithms which are developed and applied in a CoBA. The TSOs of each CoBA are obliged to respect these principles and to develop the algorithms relevant for the Balancing cooperation in their CoBA. The principles have to be submitted to all NRAs and ACER within one year after entry into force. This timeline shall guarantee that algorithm development is being progressed in a timely manner to ensure that the targets set for a European Balancing Market are achieved. The proposals for the relevant algorithms developed in accordance to these principles have to be approved by the relevant NRAs.

Article 66 – Algorithm Amendment

This article details the conditions for amendments of all Balancing algorithms. As it does not contain restrictions on who is entitled to make proposals for amendments, everyone or every entity can make such proposals to TSOs of a CoBA, which are granted the right to amend the algorithms. Nevertheless, these proposals have to be supported by detailed information explaining and documenting the rationale for them.

CHAPTER 7: REPORTING

Article 67 – Reporting

The TSOs will publish an annual report on cross-border Balancing which will, as specified in the FG EB, include detailed analyses every two years and updates thereof showing progress which has been made in the intervening years. This process will be coordinated by ENTSO-E. Structure and content which will include performance indicators as well as the frequency of publication will be defined by ENTSO-E after the NC EB comes into force and may be amended later on if deemed necessary. For example, in order to avoid undue reservation of capacity and to promote the Exchange of Reserves, the TSO shall analyse ex-ante the possibility to exchange reserves without capacity reservation.

Initially, the annual report will focus on the implementation of the NC EB. Once the integration models are fulfilled, this focus will shift towards monitoring the regional and/or pan-European Balancing Markets. This article lists the likely contents of the report in detail.

CHAPTER 8: COST-BENEFIT ANALYSIS, TRANSITIONAL ARRANGEMENTS AND DEROGATIONS

Article 68 – Cost-Benefit Analysis

During the development and implementation of regional and European wide solutions, TSOs are obliged to evaluate costs and benefits for certain issues, choosing those options that provide the highest Social Welfare.

This article lists the items that must be subjected to a Cost-Benefit Analysis on a regional and European-wide level. This includes:

- Proposals for European-wide TSO-TSO Models
- Harmonisation of Imbalance Settlement Period
- Provision and use of Cross Zonal Capacity
- Sharing of Reserves

The criteria and methodology of the Cost-Benefit Analysis are subject to public consultation and must be submitted to the (relevant) NRA for approval within six months after having received the proposal as per the approval process for considerations that concern more than one NRA.

The minimum objectives of this Cost-Benefit Analysis include the objectives of the NC EB as listed in Article 1 as well as the following:

- Technical feasibility
- A Social Welfare quantification in accordance with the NCCACM
- The implementation costs of a new Balancing mechanism or platform
- The impact on European, regional and national Balancing costs
- The potential impact on regional energy market prices as well as
- The impact on market parties in terms of additional technical or IT requirements.

The results of a Cost-Benefit Analysis will be provided to the Regulatory Authorities as part of a comprehensive proposal for specific steps forward in Balancing integration. After public consultation, the decision on the way forward then lies with the Regulatory Authorities.

Article 69 – Transition Period

As foreseen in the FG EB, the NC EB foresees a transition period of two years for some provisions in the NC EB from Article 30 to Article 33, including Articles 47 to 62 on the either NC EB which includes this time period.

Article 70 – Derogations

If a TSO cannot follow the process outlined in the NC EB, the NC EB allows for the possibility of derogations, limited in scope as well as time and linked to a clear plan on how this TSO plans to remove the existing obstacles. Derogations can only be granted on a reasoned request by the TSO, submitted at least six months before the provision under question is applied. The process to grant and monitor derogation must be transparent, non-discriminatory, non-biased and well documented. In their decision, the Relevant Regulatory Authority must take effects for adjacent markets into account and must evaluate

the impact on overall Balancing integration across Europe. Following the FG EB, the decision must be available within six months, meaning before the provision in question enters into force.

The reasoned request must show at least one of two situations:

1. The TSO applying for derogation is in a significantly different situation from other TSOs across Europe regarding the Balancing arrangements.
2. Implementing the provision for which derogation is requested would lead to significant Balancing problems for the TSO.

If derogation is granted, this TSO shall be considered compliant with the NC EB. The maximum time span for derogation, however, is two years, and a derogation may only be granted once after which period the initial reason for derogation must have been resolved and the TSO must fulfil the original provision in the NC EB.

CHAPTER 9: FINAL PROVISIONS

Article 71 – Entry into Force

The NC EB will enter into force 20 days after its publication. However, due to the various consultations and approvals, the application of different parts of the NC EB will be triggered by the timing of regulatory decisions. Because of uncertainties about the timing of the ACER opinion, the timings of the Comitology process, the time needed to deliver parts of the NC EB (the timings are “no later than”) and the time needed to approve parts of the NC EB (which could include a referral to ACER) it is not possible to say exactly when each part will apply. A close working relationship between ENTSO-E, ACER, national regulators and the Commission is, in our view, necessary to ensuring the NC EB can be implemented as quickly as possible.

7 SUMMARY OF THE PUBLIC CONSULTATION

7.1 OVERVIEW

In accordance with Article 10 (1) of Regulation (EC) 714/2009, ENTSO-E holds public consultations at an early stage and in an open and transparent manner on all Network Codes. This Chapter provides information on how the outcome of the public consultation on the NC EB and how the received comments have been accommodated the final version of the NC EB.

7.2 SUMMARY OF RESPONSES

ENTSO-E conducted from 17 June to 16 August 2013 a public consultation on the draft NC EB. The objective of the public consultation was to receive stakeholders' views on the draft NC EB in accordance with European regulation.

ENTSO-E received 2178 comments from 41 stakeholders through the web-based consultation tool. Although comments were raised to all parts of the draft NC EB, the stakeholder attention was particularly strong on Chapter 2 and Chapter 3 of the public consultation version of the NC EB. The below stakeholder organisations submitted responses to the public consultation.

Respondent Organisations		
Assoelettrica	EnBW Trading GmbH	Fortum Oyj
BDEW	Enel Group	GDF Suez
BritNed Development Limited	Energie-Nederland	IWEA
COGEN Europe	ENERGYA VM GESTION DE ENERGIA	Kymppivoima Hankinta Oy
Dansk Energi	Eni S.p.A	Oesterreichs E-Wirtschaft
DONG Energy	EPIA	Pivex Smart Grid Black Sea
E.ON AG	ESB	Poyry
EAI	Eurelectric (CEDEC, EDSO, GEODE)	SEDC
EASE	CECED	SSE
EdF	Europex	Swisselectric
EDF Energy	EWEA	Vattenfall AB
Edison	FEBEG	VIK e.V.
EFET	Febeliec	Wartsila
ELEXON Limited	Finnish Energy Industries	

Following the closure of the consultation, ENTSO-E has completed the process of considering comments and reflecting them in the text of the NC EB. For this process comments and proposals from the consultation have been aggregated and addressed by the NC EB Drafting Team, which contributed to the development of the NC EB. A summary of all respondent proposals and comments, and details on how they have been addressed by the Drafting Team, can be found in Appendix 10.1 of the supporting document.

7.3 STRUCTURAL CHANGES IN THE NC EB FOLLOWING THE PUBLIC CONSULTATION

The structure of the NC EB has been amended following the public consultation. The main change is the introduction of a new section including a set of articles (12-16) specifying intermediate steps towards the European integration model for balancing energy and for imbalance netting. The articles are structured per model type describing prerequisites and milestones of each target. The articles follow a similar approach: identification of a TSO to whom it applies, requirement to implement either the regional or the European integration model together with timings for each of the implementation step. Each model must be based on a set of common prerequisites for each implementation of a given model for all TSOs.

Likewise, Chapter 5 on Settlement has been redrafted to follow the general structure of the NC EB and the clarity of definitions and principles has been improved.

7.4 MAIN SIGNIFICANT CHANGES IN THE NC EB

The following describes a selection of the most significant changes to the NC EB after the public consultation. Due to comments from several stakeholders the provisions regarding Central Dispatch systems have been significantly redrafted. An article on 'Scheduling and Dispatch Arrangements' (article 23) now specifies how NRAs can classify a TSO as a Central Dispatch system. Furthermore, the definition of Central Dispatch system is improved and the Integrated Scheduling Process is defined.

Likewise, the extensive Article 6 on regulatory approvals has been streamlined in close cooperation with ACER and the list of NRA approvals has been reduced by incorporating them in the Terms and Conditions to be proposed by each TSO to its NRA.

A general comment in the public consultation was that the use of the term Relevant Area should be reconsidered in the NC EB. The term is generally misunderstood and criticised for its lack of link with other Network Codes. To accommodate these concerns the current version of the NC EB use the terms Responsibility Area and Scheduling Area as already defined in NC OS and NC OPS instead of Relevant Area. In the Settlement Chapter the Relevant Area has been substituted with Imbalance Area and Imbalance Price Area for better understanding. Furthermore, to ensure consistency with NC LFCR the use of the term Balancing Reserves has been changed to Balancing Capacity.

Stakeholders requested improvements to the article on gate closure times. With the new version of the NC EB Balancing Energy Gate Closure Times will be defined for each Balancing Energy Standard Product per CoBA. This means that gate closure times for each Balancing Energy Standard Product will be harmonised within the CoBAs. Gate closure times will be after the cross zonal intraday gate closure time for manually activated bids, but potentially before the cross zonal intraday gate closure time for automatically activated bids and the Integrated Scheduling Process bids used in Central Dispatch systems.

Many stakeholders also raised comments on the provisions for Procurement of Reserves. For TSOs participating in a CoBA for Exchange of Balancing Capacity, the maximum contract duration for Balancing Capacity as defined in article 32 has following the public consultation been decreased to one month and Balancing Capacity can only be procured up to one month in advance. Subject to regulatory approval the periods can be increased and on a national level (TSO procures Balancing Capacity alone) the default contract duration shall be kept one year.

7.5 CONCLUSIONS

As a consequence of the twelve months timescale ENTSO-E has only launched one formal consultation on the NC EB. ENTSO-E is therefore pleased with the broad range of respondents and the high number of comments received during this consultation. ENTSO-E believes that the draft NC EB published along with this supporting document takes the public consultation outcome into account to the widest extent possible and that the final NC EB submitted to ACER by the deadline of 1 January 2014 will reflect the views presented during the public consultation.

8 NEXT STEPS

8.1 SUBMISSION TO ACER

Regulation (EC) No 714/2009, and in particular its Article 6, defines a clear Network Code Development Process. The process begins with the set up by the Commission of an annual list of priorities amongst the twelve areas where Article 8(2) of Regulation (EC) No 714/2009 foresees the need for a NC. The annual priority list must be adopted after consultation with the relevant stakeholders.

Once a priority list is established, the Commission shall request ACER to develop and submit to it a non-binding framework guideline. The Framework Guidelines are intended to set clear and objective principles with which the Network Code should be in line. The development of a Framework Guideline is followed by a request from the Commission for ENTSO-E to develop a Network Code within a twelve month period. The Network Code to be developed by ENTSO-E within that period shall be subject to an extensive consultation, taking place at an early stage in an open and transparent manner. At the end of these twelve months ENTSO-E delivers a Network Code and set of explanatory documents to ACER for its assessment.

8.2 THE ACER OPINION

ACER has three months to assess the draft prepared by ENTSO-E and deliver a reasoned opinion. In doing so, ACER may decide to seek the views of the relevant stakeholders.

ACER can decide to recommend to the Commission that it adopts the Network Code if it is satisfied that it meets the requirements of the Framework Guidelines or can provide a negative opinion; effectively meaning the Network Code is returned to ENTSO-E.

8.3 THE COMITOLGY PROCEDURE

The Network Code prepared by ENTSO-E shall only become binding if, after being recommended to the Commission by ACER, it is adopted via the Comitology procedure.

The Comitology process will be led by the Commission who will present the draft text to representatives of Member States organised in so-called “committee”. The Comitology procedure used for the Network Codes (called regulatory procedure with scrutiny) grants the European Parliament and the Council important powers of control and oversight over the measure adopted by the committee.

For that reason, it is unclear how much time the process can take in practice. The working assumption is that it will take about twelve months from the issuing of the ACER opinion (if positive) to the conclusion of the Comitology process.

8.4 ENTSO-E STEPS DURING THIS PERIOD

Meeting the requirements of the NC EB is a significant challenge for ENTSO-E. During the period in which the Network Code is being considered by ACER and the Commission, ENTSO-E will continue working to prepare for the delivery of the requirements of the Network Code. Some of these requirements are particularly challenging and therefore beginning work in the near term is necessary to delivering them on time.

8.5 ENTRY INTO FORCE

The NC EB will enter into force 20 days after its publication. All provisions of this Network Code shall apply as from the day of expiration of a two years period following its publication.

9 LITERATURE & LINKS

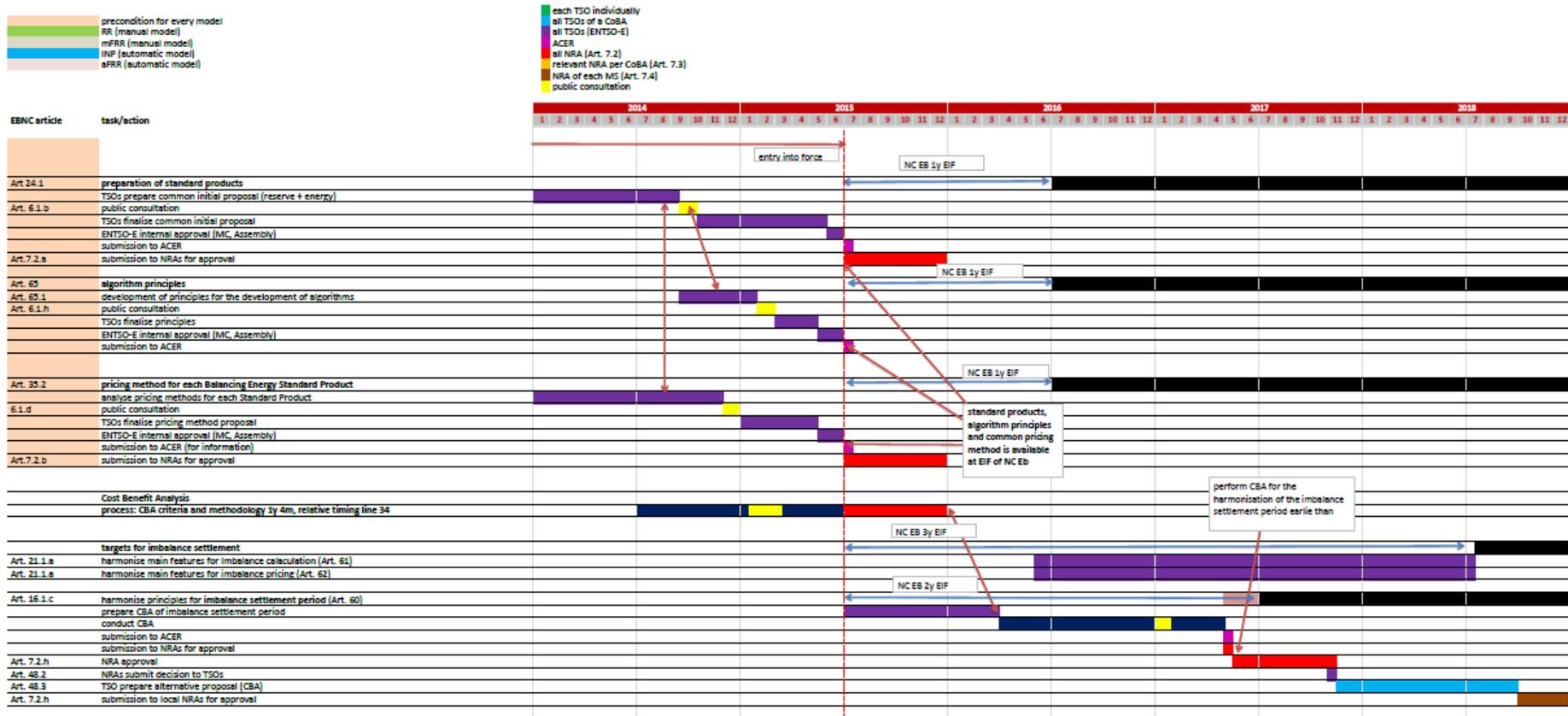
[1] “Framework Guidelines on Electricity Balancing” (FG-2012-E-009), Agency for the Cooperation of Energy Regulators (ACER), 18 September 2012

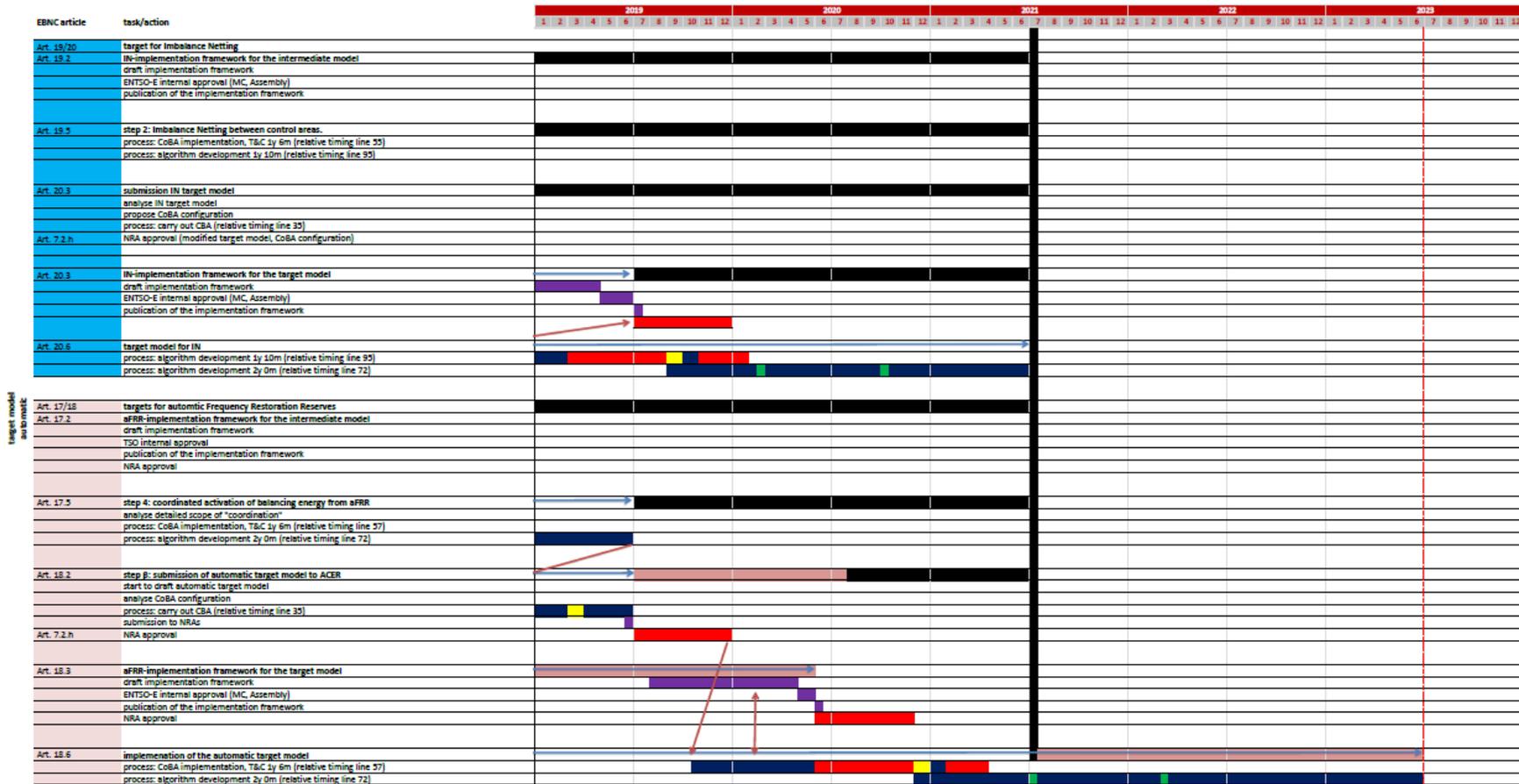
[2] Initial Impact Assessment for the Framework Guidelines on Electricity Balancing, Agency for the Cooperation of Energy Regulators (ACER), 18 September 2012

[3] Impact Assessment on European Electricity Balancing Market, Contract EC DG ENER/B2/524/2011, March 2013

10 APPENDIX

10.1 INDICATIVE NC EB IMPLEMENTATION PLAN





Notes and assumptions for the draft indicative implementation plan for the NC EB

Basic Assumptions

1. Entry into force (EIF) of NC EB in mid 2015.
2. RR: after the implementation of the regional integration model we start directly with the CBA for the modified European integration model. After the approval of the European integration model, start of the implementation of the European integration model (3 consecutive steps).
3. mFRR and aFRR: start with the CBA for the modified European integration model even before the regional integration model is implemented (6m earlier for mFRR and 12m earlier for aFRR). After the approval of the modified European integration model start of the implementation of the European integration model (overlap between regional integration model and CBA).
4. The basic assumption for mFRR and aFRR is that we gain sufficient experience due to the pilot projects and therefore it is possible to start the CBA for the modification of the European integration model before the regional integration model is implemented.
5. Start every process as early as possible:
 - Submit Standard Products, algorithm principles and the pricing method 1y earlier than requested by FG (1y after EIF) in order to create the basis for implementation as soon as possible.
 - Submit the result of Cost-Benefit Analysis (CBA) for harmonisation of the imbalance settlement period to NRAs 1y 2m before 3y deadline defined in FWGL.
 - submit the European integration model for imbalance netting to NRAs 6m before 3y deadline!
 - Fulfil 1st step of mFRR 6m before 4y deadline (4y after EIF)

Logic in sequence of steps

1. Start to work on the algorithm process only after the common proposal of a CoBA (= main CoBA principles see NC EB Art. 10.4) is approved (details see CoBA implementation process*)
2. Start to work on the algorithm process for the regional integration model only if Standard Products, algorithm principles and common pricing method are defined on a European-level.
3. Start the implementation of the European integration model only after the regional integration model is implemented.
4. Start to perform the CBA for the modification of the European integration model only if the regional integration model is implemented (respected only for RR, for mFRR and aFRR necessary to start earlier → basic assumption that enough experience is available earlier due to the good geographic spread and scope of Pilot Projects!)
5. Start the implementation of the European integration model only if CBA result for the European integration model is available and approved by NRAs.

10.2 **FRAMEWORK GUIDELINES CROSSCHECK**

The NC EB has been developed by ENTSO-E to meet the requirements of the FG EB as published by ACER on the 18 September 2012. As part of the drafting process, the ENTSO-E drafting team continually crosschecked the current draft of the NC EB against the FG EB to ensure consistency. A version of the crosscheck was provided for the consultation version of this Supporting Document and now for the submission for the NC EB to ACER. .

FG Article	NC Article Title	Para.	Remark
1 General Provisions			
1.1 Scope			
The Network Code on Electricity Balancing shall set the minimum standards and requirements needed for a competitive, harmonised and effective EU-wide balancing market, concerning cross-border and market integration issues. In particular, it shall define the necessary level of harmonisation of the varying national balancing regime design elements, in order to foster European balancing market integration.	Article 9 General Objectives of the Balancing Market		See also Article 1 and Chapter 2 Section 2 to 5
1.2 Links and dependencies			
With respect to the Network Code on Operational Security: the Network Code on Electricity Balancing shall deal with market-based selection of balancing services for load frequency control and, where relevant, real-time congestion management and take into consideration rules and processes to be defined in the network code on operational security;	Article 28 Requirements for Standard and Specific Products	1	See also Article 10(4)(d)
With respect to the Network Code on Operational Planning and Scheduling: with regard to maintaining the security of supply and selection and cross-border exchange of balancing services, the Network Code on Electricity Balancing shall deal with the procurement and product specifications of these services and take into consideration operational planning and scheduling procedures to be defined in the Network Code on Operational Planning and Scheduling;	CHAPTER 3 PROCUREMENT OF BALANCING SERVICES		
With respect to the Network Code on Load-Frequency Control and Reserves: with regard to the technical requirements for balancing services and their utilisation, the Network Code on Electricity Balancing shall ensure an efficient and market-based selection of balancing services and take into consideration technical processes, requirements and sizing principles to be defined in the Network Code on Load-Frequency Control and Reserves, as well as the technical and operational limitations for cross-border exchanges of balancing	CHAPTER 3 PROCUREMENT OF BALANCING SERVICES		

FG Article	NC Article Title	Para.	Remark
<p>services to be defined in the Network Code on Load-Frequency Control and possibly on the Network Code on Operational Security.</p>			
<p>With respect to the Network Code on Capacity Allocation and Congestion Management for electricity: the Network Code on Electricity Balancing shall take into account interactions with intraday and day-ahead time-frames, in particular gate closure times, and shall be consistent with them in terms of calculation of and access to cross-border capacities, when using them for cross-border balancing and balancing market integration.</p>	<p>Article 32 Balancing Energy Gate Closure Time</p>		<p>See also Chapter 4 Cross Zonal Capacity for Balancing Services</p>
<p>With respect to the Network Codes for Requirements for Grid Connection applicable to all Generators and the Demand Connection Code, the Network Code on Electricity Balancing shall take into account these technical requirements, where relevant, to define the product specifications for generators and loads needed for the provision of balancing services.</p>	<p>Article 28 Requirements for Standard and Specific Products</p>	<p>3</p>	<p>Standard Balancing Product characteristics apply to bids (para 5), not to connections. Standard Products allow for participation of load, storage, and generation, including renewables, aggregated or not (para 6b).</p>
<p>[The] impact [that issues addressed in the FWGL may have on electricity system operation, capacity allocation and congestion management and electricity grid connection] shall be taken into account while drafting or revising the corresponding network codes to ensure that the provisions foreseen in these Framework Guidelines and in the Network Code on Electricity Balancing are applicable in practice to maximise the efficiency of balancing while safeguarding operational security.</p>			<p>Impact assessment is a task for the EC; SD contains some indications the NC EB has been drafted taking into account the future pilot-projects and in light of existing experiences from TSOs and stakeholders.</p>

FG Article		NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall ensure an adequate level of transparency for market participants, in consistency with ERGEG final advice on Comitology Guidelines on Fundamental Electricity Data Transparency and the Comitology Guidelines on Fundamental Electricity Data Transparency once adopted.		Article 7 Publication of Information		See also Article 67 Reporting
1.3 Definitions				
1.4 Application				
The Network Code on Electricity Balancing shall take precedence over relevant national frameworks (legislation, regulation, codes, standards, etc.) for cross-border and market integration issues and national frameworks shall be adapted to the extent necessary, to ensure proper implementation at the national level.		CHAPTER 0 WHEREAS/LEGAL		Status of NC is clear from EU regulation
The Network Code on Electricity Balancing shall be without prejudice to the Member States' rights to maintain or introduce more detailed measures, provided such measures are compatible with the provisions of the Network Code on Electricity Balancing.		CHAPTER 0 WHEREAS/LEGAL		
The Network Code on Electricity Balancing shall also be without prejudice to the Member States' rights to establish national network codes which do not affect cross-border trade, in accordance with Article 8(7) of the Electricity Regulation, provided such national codes do not prevent the application and implementation of the Network Code on Electricity Balancing.		CHAPTER 0 WHEREAS/LEGAL	6	
The Network Code on Electricity Balancing shall concur with the competences of NRAs, deriving from Article 37(6)(b) of the Electricity Directive, to fix or approve, sufficiently in advance of their entry into force, at least the methodologies used to calculate or establish the terms and conditions for the provision of balancing services.		Article 6 Regulatory Approvals	6	See also Article 26 on Terms and Conditions related to Balancing

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall provide criteria for the elaboration and adoption of common methodologies, terms and/or conditions, as well as the deadline for submission to NRAs and the Agency, where relevant.	CHAPTER 1 GENERAL PROVISIONS		Anchored in various articles throughout the code
The Network Code on Electricity Balancing shall be without prejudice to the competences and powers of NRAs pursuant to the Electricity Directive, particularly pursuant to its Articles 35 et seq., which notably include, further to the competences regarding the terms and conditions, or at least the methodologies for their calculation or establishment, for the provision of balancing services in accordance with the above, competences and powers for monitoring, disputes settlements and information requests.	CHAPTER 0 WHEREAS/LEGAL		NRAs competences from the Electricity Directive are not infringed
Where relevant, the Network Code on Electricity Balancing shall require that NRAs approve, reject or request to amend the proposed terms and conditions, methodologies or any other procedures related to balancing: - within three months after having received a proposal if the approval process concerns only one NRA; - within six months after having received a proposal if the approval process concerns more than one NRA.	Article 6 Regulatory Approvals	6	
The Network Code on Electricity Balancing shall be applied taking into account possible public service obligations in application of Article 3 of the Electricity Directive and without prejudice to the regulatory regime for cross-border issues pursuant to Article 38 of the Electricity Directive.			
The standards and requirements of the Network Code on Electricity Balancing shall apply after the expiration of a transitory period to be determined in the Network Code on Electricity Balancing, unless specified otherwise in these Framework Guidelines. The determination of the transitory period shall be subject to consultation with the relevant stakeholders. This period shall not	Article 69 Transition Period	1	Public consultation was covered at the consultation on the draft NC EB

FG Article		NC Article Title	Para.	Remark
exceed two years, starting on the day of entry into force of the Network Code on Electricity Balancing.				
The standards and requirements of the Network Code on Electricity Balancing shall also apply to existing agreements related to electricity balancing that were concluded between TSO and relevant grid users (such as Balance Responsible Party (BRP) and Balance Service Provider (BSP)) before the expiration of the transitory period.		Article 69 Transition Period	3	
1.5 Derogations				
The Network Code on Electricity Balancing shall describe the process and criteria to apply for derogation.		Article 70 Derogations		
Where granted, derogations shall allow TSOs to benefit from transitional arrangements for the implementation of provisions.		Article 70 Derogations		
The Network Code on Electricity Balancing may allow for derogation for a maximum period of 2 years and shall specify the provisions for which the derogation can be granted. When identifying these provisions ENTSO-E shall provide detailed justifications with regard to the conditions mentioned in the first paragraph of this section.		Article 70 Derogations		Provisions for which derogation may be granted are not defined.
The Network Code on Electricity Balancing shall require that the application process for derogations is completed prior to the day of application of the relevant provisions.		Article 70 Derogations	4	
The Network Code on Electricity Balancing shall provide that the derogation process is transparent, non-discriminatory, non-biased, well-documented and based on a reasoned request demonstrating the fulfilment of the conditions.		Article 70 Derogations	2	

FG Article		NC Article Title	Para.	Remark
The format and content of the reasoned request shall be prescribed in the Network Code on Electricity Balancing. [The Network Code on Electricity Balancing shall prescribe that the reasoned request shall also include a detailed plan and timeline as to how the TSO requesting derogations shall address the reasons underlying its request for derogation and thus ensure the implementation of the concerned provision of the Network Code on Electricity Balancing after expiration of the derogation period. The reasoned request shall additionally take into account the consequences on adjacent markets and the fact that the derogation shall not jeopardise the integration of balancing markets across Europe.]		Article 70 Derogations	6	
During the derogation application process, the concerned TSO shall be deemed as compliant.		Article 70 Derogations	4	
The Network Code on Electricity Balancing shall require that the relevant NRA decides within 6 months on whether to grant the derogation, based on the TSO's reasoned request.		Article 70 Derogations	7	
The Network Code on Electricity Balancing shall require the communication of the TSO's reasoned request to the Agency.		Article 70 Derogations	8	
1.6 Agency involvement				
The Network Code on Electricity Balancing shall provide that ENTSO-E or NRA(s) or TSO(s) directly, as relevant, submit to the Agency, without delay, all the relevant information and documents related to the opening of any approval or fixing procedure by NRAs, as provided for in Sections 1.5, 2.2, 3.2, 3.3.1, 3.3.2, 3.4.1, 4.2 and 4.3 of these Framework Guidelines. The Network Code on Electricity Balancing shall also require relevant NRAs to inform the Agency of the outcome of any approval or fixing procedures.		Article 6 Regulatory Approvals	10	
2 General principles				
2.1 General principles pursued in the Network Code on Electricity Balancing				

FG Article	NC Article Title	Para.	Remark
<p>The specifications for national balancing reserve and balancing energy procurement and cross-border balancing exchanges shall pursue the following objectives:</p> <ul style="list-style-type: none"> - safeguarding operational security; - fostering competition, non-discrimination and transparency in balancing markets; - facilitating wider participation of demand response and renewable sources of energy; - increasing overall social welfare and efficiency; - promoting cross-border balancing exchanges. 	Article 9 General Objectives of the Balancing Market		
<p>In addition, it shall be ensured that these specifications are consistent and take into account interactions with other market timeframes (e.g. intraday, day-ahead).</p>	Article 32 Balancing Energy Gate Closure Time		See also article 10 Creation of Coordinated Balancing Areas
2.2 Role of TSOs in balancing			
<p>The Network Code on Electricity Balancing shall clearly specify the roles and responsibilities of TSOs regarding electricity balancing.</p>	Article 21 Role of the TSOs		
<p>The Network Code on Electricity Balancing shall require that each TSO is responsible for procuring the required balancing services from BSPs and is not allowed to offer the balancing services itself except, subject to NRA's approval, if system security is threatened due to insufficient bids from BSPs.</p>	Article 21 Role of the TSOs	2 and 3	
<p>The Network Code on Electricity Balancing shall define common principles for the procurement of reserves and balancing energy in order to ensure that:</p> <ul style="list-style-type: none"> - it is non-discriminatory, fair, objective, transparent and market based; - it is set to foster liquid balancing markets and avoid undue entry barrier for new entrants; - undue distortions within the internal market and in particular between adjacent markets that use different procurement mechanisms are avoided. 	Article 9 General Objectives of the Balancing Market		

FG Article	NC Article Title	Para.	Remark
2.3 Terms and conditions related to balancing			
The Network Code on Electricity Balancing shall require that TSOs, or other responsible entity where relevant, define terms and conditions related to balancing in accordance with the Network Code on Electricity Balancing and European and national legislation.	Article 26 Terms and Conditions related to Balancing		
The Network Code on Electricity Balancing shall require that these terms and conditions include reasonable and justified requirements for BSPs and BRPs. The Network Code on Electricity Balancing shall provide that TSOs are responsible for defining the modalities to be applied to BSPs, in the case of non-compliance with technical and contractual requirements, within the terms and conditions.	Article 26 Terms and Conditions related to Balancing	6 to 9	
The Network Code on Electricity Balancing shall allow for the aggregation of – at least – small units (demand and/or generation) within a control area to offer balancing services. The conditions for aggregation shall be described in the terms and conditions to be approved by NRAs after public consultation.	Article 26 Terms and Conditions related to Balancing	3a	
The Network Code on Electricity Balancing shall require that the terms and conditions related to balancing allow for load entities (whether through aggregators or not) as well as generation units from renewable and intermittent energy sources to become BSPs. These terms and conditions, including the underlying requirements, shall, in particular, be set in order to facilitate the participation of demand response, renewable and intermittent energy sources in the balancing markets, while respecting the other objectives mentioned in Section 2.1 of these Framework Guidelines.	Article 26 Terms and Conditions related to Balancing	3b	
The Network Code on Electricity Balancing shall require TSOs to establish a framework for discussion with and disseminating information to the relevant stakeholders, as well as a formal process for public consultation and the possibility for BSPs and BRPs to propose amendments to the terms and conditions related to balancing.	Article 5 Consultation	3	See also Article 7 Publication of Information

FG Article		NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall require that the terms and conditions related to balancing, including the rules and tariffs, shall be established pursuant to a methodology compatible with the competences of NRAs pursuant to Article 37(6)(b) of the Electricity Directive. The Network Code on Electricity Balancing shall specify that the provisions and process described in Section 1.4 of these Framework Guidelines apply in this case.		Article 26 Terms and Conditions related to Balancing		See also Article 10 on Creation of Coordinated Balancing Areas
The Network Code on Electricity Balancing shall require that TSOs, when consulting stakeholders on terms and conditions, methodologies or any other procedures related to balancing, give at least four weeks to stakeholders to provide their consultation responses.		Article 5 Consultation	1	
The Network Code on Electricity Balancing shall require TSOs to ensure that all parties subject to those terms and conditions related in the control area, including BSPs and BRPs, meet the requirements set in the terms and conditions for balancing markets to ensure operational security of the system.		Article 9 General Objectives of the Balancing Market		There is no explicit reference to operational security in article 26 on Terms and Conditions related to Balancing; there is, however, a reference in article 9 General Objectives of the Balancing Market
In case the Network Code on Electricity Balancing shall refer to cost recovery, it shall be without prejudice to the competences and powers of NRAs pursuant to the Electricity Directive, in particular its Article 37(1)(a), while the recovery of costs shall be limited to efficiently incurred costs.		Article 3 Recovery of Costs		According to EC, cost recovery is covered by regulation
2.4 Transparency				

FG Article	NC Article Title	Para.	Remark
<p>The Network Code on Electricity Balancing shall require TSOs to make sure that, at least, the following information is published on a public website:</p> <ul style="list-style-type: none"> - the terms and conditions related to balancing, both reserves and balancing energy, including rules and tariffs; - the information related to the requirement for becoming a BSP or a BRP; - the necessary data to ensure an economically-efficient functioning of balancing markets and to provide symmetrical information to all interested market parties: this includes volumes and prices of procured reserves, volumes and prices of all balancing energy bids – possibly in an aggregated and anonymous format – as well as volumes and prices of activated balancing energy bids of the previous imbalance settlement period; timing for publication shall be shortened in order to ensure that interested market parties are able to take this information into account in an efficient manner and shall not be longer than one hour. 	Article 7 Publication of Information	3 and 4	Volumes and prices of <i>activated</i> bids and volumes and prices of procured reserves are covered by the transparency regulation
<p>The Network Code on Electricity Balancing shall ensure an adequate level of transparency for market participants, taking into account ERGEG final advice on Comitology Guidelines on Fundamental Electricity Data Transparency and in consistency with the Comitology Guidelines on Fundamental Electricity Data Transparency once adopted.</p>	Article 7 Publication of Information		See also article 67 Reporting
2.5 Reporting and monitoring			
<p>The Network Code on Electricity Balancing shall require that TSOs develop tools ensuring real-time monitoring of performance and quality of balancing in order to maintain their area control error inside a defined range corresponding to each control area, in accordance with the provisions of Network Code on Load Frequency Control and Reserves.</p>			This obligation is sufficiently covered by Network Code on Load Frequency Control and Reserves and thus not included in NC EB.

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall require ENTSO-E to publish an annual report monitoring, describing and analysing the implementation of the Network Code on Electricity Balancing, as well as the progress made in terms of harmonisation and integration of balancing markets. The annual report shall also include some indicators measuring the efficiency of electricity balancing.	Article 67 Reporting	1 and 4	
The Network Code on Electricity Balancing may foresee that a more detailed version of the annual report is published every two years and that, for the years in between, a simpler version is published to review the progress made and update indicators, without performing detailed analyses.	Article 67 Reporting	2	
The Network Code on Electricity shall include a process to review the modalities of publication of the annual report after the target models are implemented.	Article 67 Reporting	9	
2.6 Cost-benefit analysis			
The Network Code on Electricity Balancing shall describe the process for carrying out cost-benefit analysis.	Article 68 Cost-Benefit Analysis		
This process shall require that, when TSOs are planning to carry out such an analysis, they shall first submit the criteria and the methodology to the relevant NRAs for approval. TSOs shall then provide the results of the cost-benefit analysis to the relevant NRAs, together with justified proposals on how to tackle possible issues identified by the cost-benefit analysis.	Article 68 Cost-Benefit Analysis		
3 Procurement of balancing services			
3.1 Role of BSPs in balancing			
BSPs shall provide all necessary data and information needed by the TSO and/or distribution system operator to evaluate the balancing service provided, at both the pre-qualification stage and real-time operation of the system.	Article 26 Terms and Conditions related to Balancing	7	
3.2 Standardization of products			

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall require a standardisation of balancing energy and balancing reserve products used to balance the system in line with the objectives mentioned in Section 2.1 of these Framework Guidelines. The Network Code on Electricity Balancing shall list the standard characteristics, which define balancing energy and balancing reserve products.	Article 28 Requirements for Standard and Specific Products	2 to 5	
The Network Code on Electricity Balancing shall require that all TSOs prepare a common proposal for standard balancing energy and balancing reserve products, including detailed specifications of their characteristics.	Article 28 Requirements for Standard and Specific Products	2	
The Network Code on Electricity Balancing shall set forth a process to define, review and update the list of standard products, which includes a public consultation with market participants. The process shall foresee a proposal from all TSOs to all NRAs and the Agency.	Article 28 Requirements for Standard and Specific Products	3 and 4	
The Network Code on Electricity Balancing shall specify that the provisions and process described in Section 1.4 of these Framework Guidelines apply to the approval of the list of standard balancing energy and balancing reserve products and of its subsequent updates.	Article 6 Regulatory Approvals	2c	
The first proposal shall be submitted to the Agency and to all NRAs, no later than one year after entry into force of the Network Code on Electricity Balancing.	Article 28 Requirements for Standard and Specific Products	2	
The characteristics of standard products shall satisfy the needs of TSOs, in order to balance the system and take into account the technical characteristics of available balancing resources across Europe, in particular from demand and renewable generation units, as well as smaller generation units.	Article 28 Requirements for Standard and Specific Products	6	Availability is ensured by stakeholder consultation (Article 5)
When defining these products, TSOs shall foster cross-border competition and avoid undue market fragmentation.	Article 9 General Objectives of the Balancing Market		See also Article 9 on General Objectives

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall also allow for specific balancing energy and balancing reserve products, if the resources from standard products would not be sufficient to balance the system, and if this does not create significant inefficiencies and distortions in national or cross-border adjacent markets.	Article 28 Requirements for Standard and Specific Products	7	
In such cases, TSOs using these specific products shall justify the existence of these products and seek the approval or fixing of the relevant NRAs.	Article 6 Regulatory Approvals	6g	
In addition, they shall publish the information on the volumes of specific products available and actually activated, and analyse in the annual report the costs and benefits, and the possible inefficiencies and distortions of having these specific products in terms of competition and market fragmentation, facilitation of demand response and participation of renewable energy sources, integration of balancing markets and side-effects on other electricity markets.	Article 7 Publication of Information	4	See also article 67 on Reporting
TSOs shall make specific balancing energy products available for cross-border exchanges. In case these products cannot be activated by other TSOs, they shall still be made visible to them.	Article 28 Requirements for Standard and Specific Products	7c	See also article 29 on Conversion of products
3.3 Activation and cross-border exchanges of balancing energy			
3.3.1 Activation of balancing energy			
The Network Code on Electricity Balancing shall provide that the bids from the merit order list are activated through a non-discriminatory, fair, objective and transparent mechanism which optimises the use of balancing resources and of the transmission infrastructure and minimises the costs of balancing whilst taking into account technical and network constraints.	Article 40 Activation Mechanism for Balancing Energy	2	
This mechanism shall be described in the terms and conditions mentioned in Section 2.3.	Article 26 Terms and Conditions	1	See also Article 10 on Creation of Coordinated Balancing Areas.

FG Article		NC Article Title	Para.	Remark
		related to Balancing		
Deviation from the merit order shall be reported transparently.		Article 39 General provisions	6	Also covered by Transparency Regulation
The Network Code on Electricity Balancing shall foresee that the activation of frequency restoration reserves (in particular when manually activated) and replacement reserves is coordinated in order to allow efficient utilisation and arbitrage between these balancing resources across markets.		Article 40 Activation Mechanism for Balancing Energy	11	The coordination is foreseen in the NC.
The Network Code on Electricity Balancing shall require the harmonisation of the pricing method for balancing energy products, which shall ensure an economically efficient use of demand response and other balancing resources subject to operational security limits and shall give correct price signals and incentives to market participants.		Article 38 General provisions		
The Network Code on Electricity Balancing shall set forth a process to define, review and change the common pricing method. This process shall include public consultation with market participants.		Article 38 General provisions	2, 3	See also Article 5 on Consultation
[The Network Code on Electricity Balancing] shall foresee a proposal from all TSOs to all NRAs and the Agency.		Article 38 General provisions	2	See also Article 6 on Regulatory Approvals
The Network Code on Electricity Balancing shall specify that the provisions and process described in Section 1.4 of these Framework Guidelines apply to the approval of the common pricing method and of any subsequent revisions.		Article 6 Regulatory Approvals	2d	

FG Article		NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall provide that the initial proposal for the pricing method shall be submitted to the Agency and all NRAs no later than one year after the entry into force of the Network Code on Electricity Balancing and shall be based on marginal pricing (pay-as-cleared), unless TSOs provide all NRAs with a detailed analysis demonstrating that a different pricing method is more efficient for EU-wide implementation in pursuing the general objectives defined in Section 2.1.		Article 38 General provisions	2	
The Network Code on Electricity Balancing shall allow BSPs to place and/or update their bids as close to real time as possible and at least up to one hour before real time.		Article 31 Balancing Energy Gate Closure Time	3 and 4	Only partly included in NC EB. Earlier gate closure times are envisaged for aFRR and Integrated Scheduling Process bids
The Network Code on Electricity Balancing shall give the possibility for TSOs to require information on unused generation capacity and other balancing resources after day-ahead and intraday markets, and/or require BSPs to offer this capacity in the balancing markets, subject to approval or fixing of the respective NRAs.		Article 26 Terms and Conditions related to Balancing	9	
The Network Code on Electricity Balancing shall require TSOs to perform and share, amongst themselves, close-to-real-time short-term predictive forecasts of system conditions (generation, load, reserve requirements, transmission network, etc.) in a harmonised way, in order to coordinate and optimise the balancing actions taken.				Covered by NC OS articles 16 and 17 and NC OPS article 15
The Network Code on Electricity Balancing shall oblige TSOs to allow the participation of balancing resources to provide balancing energy, without having a contract for reserves, at least for resources that are used as replacement reserves and manually activated frequency restoration reserves.				

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall require ENTSO-E to assess, in the annual report, the progress in harmonisation of balancing products and rules for activation of balancing energy and integration of balancing markets, as well as the progress in terms of social welfare and economic efficiency. The annual report shall also analyse the effects of remaining non-harmonisation.	Article 67 Reporting	4	
3.3.2 Cross-border exchanges of balancing energy			
The Network Code on Electricity Balancing shall set all necessary features to facilitate the development of cross-border exchanges of balancing energy and stipulate that these are made possible on every border.	Article 10 Creation of Coordinated Balancing Areas		See also article 11 Extension and Merging of Coordinated Balancing Areas and articles 12-20
The Network Code on Electricity Balancing shall oblige TSOs to coordinate in order to minimise, when economically efficient, counteracting activation of balancing energy between control areas, taking into account cross-border capacities (i.e. netting of system imbalances).	Section 5 Models for Imbalance Netting		The obligation is foreseen via approval of the implementation framework by all NRAs.
The Network Code on Electricity Balancing shall oblige TSOs to coordinate and optimise the activation of balancing energy from resources that are used as replacement reserves and manually activated frequency restoration reserves.	Section 2 Models for Exchange of Balancing Energy for Replacement Reserves		See also section 3 Models for Exchange of Balancing Energy for Frequency Restoration Reserves with Manual Activation
The Network Code on Electricity Balancing shall oblige TSOs to coordinate and optimise the activation of balancing energy from resources that are used as automatically activated frequency restoration reserves.	Section 4 Models for Exchange of Balancing Energy for Frequency Restoration Reserves with Automatic Activation		The obligation is foreseen via approval of the implementation framework by all NRAs.

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall define that exchanges of balancing energy are to be based on a TSO-TSO model with common merit order list.	Article 12 Regional Integration Model for Replacement Reserves		See also articles 13-20
The Network Code on Electricity Balancing may allow for a different common merit order list at least for automatically, where relevant, and manually activated reserves.	Article 40 Activation Mechanism for Balancing Energy		
An optimisation process may be used to allow for a concrete and efficient implementation, and the use of common merit order lists with different products and technical constraints.	Article 40 Activation Mechanism for Balancing Energy	10	
The Network Code on Electricity Balancing shall provide a full description of the models for exchanging balancing energy, including the prerequisites (e.g. contractual or operational) and the technical requirements to implement them. In particular, the Network Code on Electricity Balancing shall describe: <ul style="list-style-type: none"> - the principles according to which TSOs share and activate balancing bids and offers. These principles shall ensure non-discrimination and avoid distortions between markets. The declination of these principles at the national level shall be non-discriminatory, objective, fair and transparent, and submitted to NRAs for approval or fixing; - the adaptation of processes needed to allow for exchanging balancing energy; - the settlement rules between TSOs; - the responsibilities of the different parties involved. 			Anchored in various articles throughout the code

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall foresee that the settlement rules between TSOs include financial compensation for balancing energy exchanged implicitly, in particular due to the netting of system imbalances and due to unintentional deviations (difference between the control area schedules and tie-line flows), based on the prices of balancing energy.	Article 57 Unintended Exchanges of Energy		See also article 56 on Intended Exchange of Energy
The Network Code on Electricity Balancing shall define standard features for the exchange of balancing energy, both from replacement reserves and from frequency restoration reserves – including the products needed and the characteristics of a common optimisation process – so as to ensure compatibility between different implementation projects towards the solutions required in these Framework Guidelines.	Article 28 Requirements for Standard and Specific Products		See also article 40 Activation Mechanism for Balancing Energy
The Network Code on Electricity Balancing shall oblige the TSOs involved in different cross-border balancing projects to work in close coordination so that these projects remain compatible in terms of systems, governance etc. in order to ensure efficient convergence of these projects.	Article 10 Creation of Coordinated Balancing Areas	5	See also article 67 on Reporting and article 11 on Extension and Merging of Coordinated Balancing Areas
The Network Code on Electricity Balancing shall oblige ENTSO-E to report to the Agency as soon as incompatibilities are identified.	Article 11 Extension and Merging of Coordinated Balancing Areas	4	
The Network Code on Electricity Balancing shall require that for each project the implementation model for cross-border balancing exchanges is submitted to the relevant NRAs for approval or fixing, after public consultation.	Article 6 Regulatory Approvals	2a	
<u>Cross-border exchanges of balancing energy from replacement reserves and manually activated frequency restoration reserves</u>			

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall require that, no later than two years after its entry into force, the multilateral TSO-TSO model with common merit order list is implemented for the exchange of balancing energy from resources that are used as replacement reserves.	Article 12 Regional Integration Model for Replacement Reserves		The multilateral TSO-TSO model with common merit order list for RR will be implemented 2 years and 6 months after entry into force of the NC EB
The Network Code on Electricity Balancing shall require that, no later than four years after its entry into force, the multilateral TSO-TSO model with common merit order list is extended to balancing energy from resources that are used as manually activated frequency restoration reserves.	Article 14 Regional Integration Model for Frequency Restoration Reserves with Manual Activation		The multilateral TSO-TSO model with common merit order list for FRRm will be implemented 3 years and 6 months after entry into force of the NC EB
The Network Code on Electricity Balancing shall foresee that, at these stages, TSOs may decide not to share a certain amount of the most expensive balancing energy bids gathered in their control area in the common merit order list.	Article 12 Regional Integration Model for Replacement Reserves		See also article 13 Regional Integration Model for Frequency Restoration Reserves with Manual Activation and article 39 General Provisions on Activation of Balancing Energy
The Network Code on Electricity Balancing shall specify the criteria and general methodology for defining the volume of unshared bids, which shall take into account the availability (e.g. using a statistical or probabilistic approach) of the bids from the common merit order list.	Article 39 General provisions	10	See also article 5 Consultation and article 6 Regulatory Approvals
The total volume of unshared bids (i.e. most expensive and specific) shall not exceed the volumes of reserves defined by the dimensioning rules foreseen in the Network Code on Load Frequency Control and Reserves.	Article 39 General provisions	10	

FG Article	NC Article Title	Para.	Remark
The methodology shall avoid any free-riding behaviour from participating TSOs and allow for a reciprocal and efficient sharing and activation of balancing resources.	Article 39 General provisions	10	
The Network Code on Electricity Balancing shall impose that the definition and application of the methodology at the national level is submitted to public consultation and that each TSO justifies the volume of unshared bids and seeks the approval or fixing of NRAs. The methodology and its application may be reviewed and updated every year to improve its efficiency, after public consultation and NRA's approval or fixing.	Article 5 Consultation	2d	See also article 6.7.h on Regulatory Approvals
The Network Code on Electricity Balancing shall require, no later than six years after its entry into force, TSOs to be obliged to share, in a European-wide TSO-TSO model with common merit order list, all balancing energy bids from resources that are used as replacement reserves and manually activated frequency restoration reserves.	Article 13 European Integration Model for Replacement Reserves		Final target deadlines will be defined in the Implementation Frameworks of the Target Models. See also article 15 European Integration Model for Frequency Restoration Reserves with Manual Activation.
The Network Code on Electricity Balancing shall require that, if TSOs identify certain features of this target which are not feasible or do not ensure positive net benefit, they shall prepare a proposal for modification of these features no later than three years after the entry into force of the Network Code on Electricity Balancing. This proposal shall be consulted with market participants and supported by a thorough cost-benefit analysis and justification of each proposed modification. The proposal shall be submitted to all NRAs and the Agency.	Article 13 European Integration Model for Replacement Reserves	2	See also article 15, 17 and 19
The Network Code on Electricity Balancing shall specify that the provisions and process described in Section 1.4 of these Framework Guidelines apply to the approval of the modification of the above-referred features.	Article 6 Regulatory Approvals	2	
<u>Cross-border optimised activation of balancing energy from automatically activated frequency restoration reserves</u>			

FG Article		NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall require that, no later than two years after its entry into force, TSOs coordinate in order to minimise, when economically efficient, counteracting activation of balancing energy between control areas, taking into account cross-border capacities (i.e. netting of system imbalances).		Article 18 Regional Integration Model for Imbalance Netting		
The Network Code on Electricity Balancing shall require that, no later than four years after its entry into force, the activation of balancing energy from automatically activated frequency restoration reserves is coordinated between TSOs in order to optimise their use and reduce balancing costs. It shall also be coordinated with the activation of balancing energy from manually activated frequency restoration reserves and replacement reserves to ensure the efficient use of all balancing resources.		Article 16 Regional Integration Model for Frequency Restoration Reserves with Automatic Activation		No obligation for coordination with activation of aFRR and RR.
The Network Code on Electricity Balancing shall require that all TSOs elaborate a proposal on the target model for the exchanges of balancing energy from automatically activated frequency restoration reserves. This proposal shall be consulted with market participants and submitted to all NRAs and the Agency no later than three years after the entry into force of the Network Code on Electricity Balancing.		Article 17 European Integration Model for Frequency Restoration Reserves with Automatic Activation		Principle is fulfilled but the deadline has been changed from 3 to 4 years because of results from the Implementation Plan.
The Network Code on Electricity Balancing shall specify that the provisions and process described in Section 1.4 of these Framework Guidelines apply to the approval of the target model for the exchanges of balancing energy from automatically activated frequency restoration reserves.		Article 17 European Integration Model for Frequency		Target model is already defined in article 17.

FG Article	NC Article Title	Para.	Remark
	Restoration Reserves with Automatic Activation		
The proposal shall ensure the activation of the most efficient resources across large areas and positive net benefits of implementation. It shall be based on the common merit order list or another approach, for which TSOs are able to demonstrate a higher efficiency based on the comparison between economic net benefits and implementation as well as related operational costs. When elaborating this proposal, TSOs shall ensure a proper level of stakeholder involvement.	Article 40 Activation mechanism for balancing energy		
Unless otherwise decided by all NRAs, the proposed model shall be implemented no later than six years after the entry into force of the Network Code on Electricity Balancing.	Article 17 European Integration Model for Frequency Restoration Reserves with Automatic Activation		Final implementation deadline will be defined in the Implementation Frameworks of the Target Model
The Network Code on Electricity Balancing shall specify that ENTSO-E shall include, in the annual report, an assessment of the progress of coordinating the activation of balancing energy from frequency restoration reserves and from replacement reserves and clearly address in the annual report the status of the projects in which each TSO is involved.	Article 67 Reporting	5	
3.4 Procurement and exchanges of contracted reserves			
3.4.1 Procurement of contracted reserves			

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall require TSOs to coordinate in determining the amount of reserves which is necessary in their control area, taking into account requirements from the Network Code on Load Frequency Control and Reserves and potential gains from the sharing of reserves and balancing energy as foreseen in Sections 3.2.2 and 3.3.2 of these Framework Guidelines.			Dimensioning is covered by NC LFCR
TSOs shall publish an annual report in which they shall justify the amount of procured reserves with respect to these considerations.	Article 67 Reporting	4	
The Network Code on Electricity Balancing shall define common principles for the procurement of reserves in order to ensure that it is non-discriminatory, fair, objective, transparent, market-based and economically efficient, and that there are limited distortions between adjacent markets that use different procurement mechanisms.	Article 35 General Provisions		
Procurement shall be made for upward and downward reserves separately. However, if it can be demonstrated that social welfare is improved and that it does not hinder the participation of demand response, renewable and intermittent energy sources, then a TSO may be allowed to combine procurement and to accept additional bids linking upward and downward bids, subject to approval by its NRA.	Article 33 General provisions	5	See also article 35 General Provisions
The Network Code on Electricity Balancing shall provide that the timeframes and duration of reserve procurement are defined so that it facilitates participation of new entrants, demand response and renewable generators as well as small generators.	Article 35 General Provisions		See also article 9 General Objectives of the Balancing Market
The Network Code on Electricity Balancing shall oblige TSOs to procure as many reserves as possible in the short term. Any long term procurement shall be thoroughly justified to their NRAs and related information shall be published.	Article 33 General provisions	3	See also article 35 General Provisions

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall oblige TSOs to allow the collateralisation of reserves: a BSP who contracted with a TSO to provide reserves shall be allowed to purchase reserves from another BSP in shorter timeframes, as long as the TSO is informed and the other BSP is physically able to provide the required reserve product.	Article 34 Transfer of Balancing Capacity within a Responsibility Area or Scheduling Area when appropriate		See also Article 36 Transfer of Balancing Capacity within a Coordinated Balancing Area
TSOs shall define the modalities of collateralisation of reserves, which shall be included in the rules and/or modalities of reserve procurement. These modalities shall include responsibility/liability arrangements.	Article 34 Transfer of Balancing Capacity within a Responsibility Area or Scheduling Area when appropriate		See also article 36 Transfer of Balancing Capacity within a Coordinated Balancing Area
The Network Code on Electricity Balancing shall require that rules and/or modalities of reserve procurement are made public and submitted to NRAs for approval or fixing after public consultation.	Article 6 Regulatory Approvals		Included in Terms and Conditions Related to Balancing that undergo public consultation and regulatory approval
The Network Code on Electricity Balancing shall require ENTSO-E to assess the progress of harmonisation of products and rules for procurement of contracted reserves, in the annual report. This report shall analyse the effects of non-harmonisation.	Article 67 Reporting	4	
3.4.2 Cross-border exchanges of contracted reserves			

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall support cross-border exchange of reserves. [Cross-border exchange of reserves shall respect the requirements defined in the Network Codes on Load Frequency Control and Reserves and on operational planning and scheduling.]	Article 35 General Provisions	2	
The Network Code on Electricity Balancing shall specify that cross-border exchanges of reserves are possible only in situations where reservation of cross-border capacity is not necessary, or under condition of capacity reservation.	Article 36 Transfer of Balancing Capacity within a Coordinated Balancing Area	5	See also article 35 General Provisions
The Network Code on Electricity Balancing shall allow cross-border exchanges of reserves without reservation of cross-border capacity, subject to conditions for system security as set out by the Network Code on Load Frequency Control and Reserves.	Article 35 General Provisions	2	
The Network Code on Electricity Balancing shall oblige neighbouring TSOs to regularly assess the opportunity to exchange reserves cross-border without reservation of cross-border capacity and report back to their NRAs.	Article 67 Reporting	4 d to e	
The Network Code on Electricity Balancing shall define and allow the following models for exchanging reserves, as well as their prerequisites in terms of coordination, arrangements and guaranteeing operational security: - to exchange surpluses of reserves through a bilateral reserve trading model: this model refers to bilateral exchanges of reserves between two adjacent areas in which reserve procurement processes have not been integrated, nor harmonised; - to implement a multilateral reserve trading model involving TSOs and BSPs of two or more control areas, through a common procurement process: this model refers to multilateral exchanges of reserve between two or more adjacent areas in which reserve procurement processes have been harmonised and integrated into a common procurement process.	Article 37 Transitional Procurement of Balancing Capacity for Frequency Restoration Reserves and Replacement Reserves in form of a TSO-BSP model		

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall also define and allow the sharing of reserves.	Article 41 Reservation of Cross Zonal Capacity for TSOs	1	
The sharing of reserves shall allow to diminish the amount of contracted reserves, ceteris paribus, while keeping the same level of security following the stipulations of the Network Code on Load Frequency Control and Reserves, by using them more efficiently and limiting risks of system imbalances.			Dimensioning is covered by NC LFCR
The Network Code on Electricity Balancing shall require that the sharing of frequency restoration reserves is envisaged by adjacent TSOs.			This is covered by Article 16 and the CoBA concept pursuant to Article 10.
Where requested, TSOs shall provide their NRAs with a cost-benefit analysis on the implementation of such a model. Based on this analysis, NRAs shall decide on the extent to which sharing of reserves shall be implemented.			Extend of Sharing of Reserves is defined in NC LFCR (Chapter 9, Section 1 and 2).
The Network Code on Electricity Balancing shall oblige TSOs to define modalities for exchanges of reserves and to submit them to relevant NRAs for approval or fixing after public consultation.	Article 41 Reservation of Cross Zonal Capacity for TSOs		And article 6 on Regulatory Approvals for reservation methodologies.
The Network Code on Electricity Balancing shall impose that these modalities are transparent, objective, fair, non-discriminatory, market-based, and allow for an economically efficient cross-border procurement of reserves.	Article 9 General objectives of the Balancing Market	1f	Not explicitly mentioned, but repeatedly included as overall guidelines for the code.
The Network Code on Electricity Balancing shall require ENTSO-E to assess the development of cross-border exchanges of contracted reserves, in the annual report.	Article 67 Reporting	4	
4 Reservation and use of cross-border capacity for balancing			

FG Article		NC Article Title	Para.	Remark
4.1 Underlying grid model and cross-border capacity calculation for balancing				
The Network Code on Electricity Balancing shall impose that, when balancing the system and exchanging balancing energy, TSOs take into account the physical capabilities of the network and make the most efficient use of these network capabilities.				Implicitly included throughout the code.
TSOs shall use a cross-border capacity calculation method at least as precise as in previous timeframes. Load flow calculations in balancing time-frame shall be considered, if applicable, and TSOs shall avoid any aggregated approach which would deteriorate the economic efficiency of balancing, unless it is thoroughly and transparently justified to NRAs and the Agency.		Article 48 Calculation of Cross Zonal Capacity for the Exchange of Balancing Energy or Imbalance Netting Process		
The Network Code on Electricity Balancing shall require that locational information of balancing resources is used to further optimise the balancing of the system and perform security analysis to avoid internal and cross-border congestions. The functioning of common merit order list shall technically enable TSOs to benefit from locational information of balancing resources.		Article 40 Activation mechanism for balancing energy	2	
4.2 Use of cross-border capacity for balancing				
The Network Code on Electricity Balancing shall foresee a mechanism that allows TSOs to allocate cross-border capacities for the exchange of balancing services on an efficient, market-based, fair, objective, non-discriminatory and transparent basis and, in case of congestion or scarce cross-border capacities, price cross-border capacities in consistency with other timeframes.		Article 41 Reservation of Cross Zonal Capacity for TSOs		See also article 46 Reservation of Cross Zonal Capacity for Balancing Service Provider

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall prohibit any additional charge (except for losses in consistency with other timeframes, if approved by relevant NRAs) for the exchange of balancing energy for TSOs, which use the available transfer capacity after the intraday cross-border gate closure time. This rule shall not prevent cost recovery for exempted interconnectors – if foreseen in their exemption – if they are used to facilitate the exchange of balancing energy, in consistency with other timeframes.	Article 49 Pricing of Cross Zonal Capacity for the Exchange of Balancing Energy or Imbalance Netting Process		
4.3 Reservation of cross-border capacity for balancing			
The Network Code on Electricity Balancing shall forbid TSOs to reserve cross-border capacity for the purpose of balancing, except for cases where TSOs can demonstrate that such reservation would result in increased overall social welfare and provide a robust evaluation of costs and benefits.	Article 41 Reservation of Cross Zonal Capacity for TSOs	2	
The modalities for the assessment of cross-border capacity reservation shall be defined in the Network Code on Electricity Balancing, avoiding undue discrimination between TSOs and market participants using the cross-border capacity in particular with regard to firmness. These modalities shall also take into account, for highly meshed areas with interdependent interconnections, particularities linked to flow based capacity calculation and allocation and the necessary regional coordination.	Article 48 Calculation of Cross Zonal Capacity for the Exchange of Balancing Energy or Imbalance Netting Process		
The Network Code on Electricity Balancing shall require that any decision on cross-border transmission capacity reservation for balancing is taken on a case-by-case basis, by relevant NRAs supported by a full cost-benefit analysis and market consultation, in a transparent, non-discriminatory, fair and objective manner.	Article 5 Consultation	2f	See also Article 6(5) on Regulatory Approvals

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall establish a general methodology for the cost-benefit analysis required to support cross-border capacity reservation. The methodology shall, amongst other things, require an assessment of the expected costs and welfare loss on other electricity markets and the expected benefits and welfare gain on balancing market, and shall also consider the distribution of both among markets and TSOs. The cost-benefit analysis shall, as far as possible, be undertaken on the basis of market data and consider the impacts on neighbouring markets.	Article 68 Cost-Benefit Analysis	2	
The Network Code on Electricity Balancing shall foresee that TSOs request a cross-border capacity reservation, before the period of reservation, from relevant NRAs for approval or fixing, specifying the reservation period, maximum amount of cross-border capacity to be reserved, the expected purpose of the reservation and providing cost-benefit analysis based on the methodology described in the Network Code on Electricity Balancing. Prior to the decision, the relevant NRAs shall consult with market participants.	Article 6 Regulatory Approvals	5c	
In case cross-border capacity is not used for a given purpose, it shall be given to the market at the next allocation, if applicable.	Article 41 Reservation of Cross Zonal Capacity for TSOs	2	
The Network Code on Electricity Balancing shall allow the implementation of a method which combines and co-optimises cross-border capacity reservation for balancing purposes and cross-border capacity allocation for other electricity market purposes. In such cases, the cost-benefit analysis may be simplified and it would facilitate the relevant NRAs' approval or fixing to ensure that social welfare is maximised.	Article 41 Reservation of Cross Zonal Capacity for TSOs		

FG Article	NC Article Title	Para.	Remark
<p>The Network Code on Electricity Balancing shall oblige that the relevant TSOs publish:</p> <ul style="list-style-type: none"> - before the start of the reservation period - the amount of cross-border transmission capacity reserved and the duration of this reservation, as well as the price at which the cross-border capacity was reserved, where relevant; - every day - the actual use of this reserved cross-border capacity on a program time unit basis. 	Article 7 Publication of Information	3	Also covered by Transparency Regulation
<p>The Network Code on Electricity Balancing shall require that the relevant TSOs provide the data and analyses to their NRAs, if requested, for the purpose of ex-post monitoring of realised costs and benefits.</p>	Article 67 Reporting		NRA receive this information via the annual report; NRA may request additional information based on existing legislation
<p>The Network Code on Electricity Balancing shall require ENTSO-E to prepare and present an ex-post analysis of the realised costs and benefits of all reserved cross-border capacities, in the annual report.</p>	Article 67 Reporting	6	
5 Balance responsibility and imbalance settlement			
5.1 General principles			
<p>The Network Code on Electricity Balancing shall describe that the general objective of imbalance settlement in national balancing mechanisms is to ensure that BRPs support the system's balance in an efficient way and incentivise market participants in keeping and/or helping to restore the system balance.</p>	Article 50 General settlement principles	1	
<p>The Network Code on Electricity Balancing shall define imbalance settlement and ensure that it is made on a non-discriminatory, fair, objective and transparent basis, and that there are limited distortions between adjacent markets induced by differing settlement mechanisms.</p>	Article 50 General settlement principles	1	
<p>Settlement mechanisms shall be part of the terms and conditions that are to be fixed or approved ex ante by the NRAs, and shall be transparent and published.</p>	Article 26 Terms and Conditions	6d	

FG Article		NC Article Title	Para.	Remark
		related to Balancing		
The Network Code on Electricity Balancing shall require that imbalance settlement rules are defined in a way that supports competition among market participants by creating a level-playing field and does not unduly discriminate against participants without generation or demand inside a control area.		Article 50 General settlement principles	1	
5.2 Role of BRPs				
The Network Code on Electricity Balancing shall specify the role of BRPs, including the requirements specified in this section.		Article 24 Role of Balance Responsible Parties		
All injections and withdrawals shall be covered by balancing responsibility.		Article 50 General settlement principles	6	
The BRPs shall meet the requirements set in the terms and conditions defined by the TSO or an entity responsible for imbalance settlement and contractually agreed upon.		Article 26 Terms and Conditions related to Balancing	8	
The BRPs shall provide all necessary data and information needed by the TSO and/or Distribution System Operator to evaluate the balancing service needs both for the planning and balance settlement purposes.		Article 26 Terms and Conditions related to Balancing	8	
The BRPs shall ensure the procedures for proper imbalance handling. The BRPs shall be incentivised to be balanced in real time.		Article 50 General settlement principles	1	

FG Article	NC Article Title	Para.	Remark
The BRPs shall be incentivised to help the system to restore its balance.	Article 50 General settlement principles	1	
TSOs and NRAs may also decide to oblige BRPs to provide balanced programs in the day-ahead timeframe which may be subject to changes in intraday and to incentivise BRPs to help to restore system balance.	Article 26 Terms and Conditions related to Balancing	9	
The Network Code on Electricity Balancing shall impose that generation units from intermittent renewable energy sources do not receive special treatment for imbalances and have a BRP, which is financially responsible for their imbalances.	Article 50 General settlement principles	6	The article ensures that all injections and withdrawals shall be subject to imbalance settlement or settlement between TSOs. Therefore, there is no exception for RES in the code.
5.3 Imbalance settlement			
The Network Code on Electricity Balancing shall provide that [the imbalance settlement period] is consistent with program time unit and encourage BRPs to be balanced as close to the physical reality as possible, or help the system to restore its balance.	Article 50 General settlement principles	1	also article 58 Imbalance Settlement Period
ENTSO-E shall carry out a cost-benefit analysis on whether the imbalance settlement period shall be harmonised across Europe and report its results to the Agency.	Article 58 Imbalance Settlement Period	1	
The imbalance settlement period shall not exceed 30 minutes. However, in case a TSO provides a detailed cost-benefit analysis to its NRA, the NRA may decide to have a longer imbalance settlement period.	Article 58 Imbalance Settlement Period	1 and 2	

FG Article	NC Article Title	Para.	Remark
The Network Code on Electricity Balancing shall define harmonised principles for calculating imbalances. All imbalances shall be subject to compensation via the imbalance pricing.	Article 59 Imbalance Calculation		See also article 21 Target for Imbalance Settlement
The Network Code on Electricity Balancing shall define the principles for imbalance settlement pricing. BRPs shall have the right incentives to manage their own balance close to real time. Therefore, imbalances shall be settled in a non-discriminatory, transparent, fair and objective way, at a price that provides incentives to BRPs to support the system's balance in an efficient way and/or to balance their portfolio before real time actions are necessary from the TSOs and reflects the costs of balancing the system in real time.	Article 60 Imbalance Price		See also article 50 General settlement principles
Imbalance pricing shall at least include the costs of activated balancing energy (from frequency restoration reserves and replacement reserves) in the imbalance settlement period. Imbalance pricing shall also take into account the cross-border netting of system imbalances and unintentional deviations in order to avoid distortions of incentives or counterproductive incentives. However, imbalance pricing shall not include additional costs linked to possible deviations from the merit order list to alleviate congestions internal to a control area.	Article 60 Imbalance Price		See also article 50 General settlement principles
The Network Code on Electricity Balancing shall describe the necessary information to be published by the TSOs that is needed for BRPs to be able to help to balance the system and/or to restore its balance.	Article 7 Publication of Information	3	Mostly covered by Commission Regulation (EU) No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets, only additional requirements in NC EB. TSOs have an incentive to publish information that allows for a balanced system.
The Network Code on Electricity Balancing shall impose that the main features of the imbalance settlement are harmonised no later than three years after the entry into force of the Network Code on Electricity Balancing.	Article 20 Targets for		

FG Article		NC Article Title	Para.	Remark
		Imbalance Settlement		
<p>The Network Code on Electricity Balancing shall require ENTSO-E to assess the progress of harmonisation of imbalance settlement arrangements as well as the consequences and possible distortions due to non-harmonised features in the annual report.</p>		Article 67 Reporting	5f	

10.3 SUMMARY OF PUBLIC CONSULTATION COMMENTS AND RESPONSES TO THOSE COMMENTS

10.3.1 Overview

This second annex provides ENTSO-E's assessment of comments provided as part of the web-based consultation on the draft Network Code on Electricity Balancing between 17 June and 16 August 2013. Rather than providing responses per individual comment received, an assessment of all input received has been undertaken on a clustered basis.

The Article numbering in this document refers to the Article numbering of the draft NC EB published on 17 June.

In order to provide a clear oversight of comments and responses, the issues mentioned in this document may have been summarised with respect to the original comments provided. For a full overview of all comments provided in the web-based consultation, in their original formulation, please refer to <https://www.entsoe.eu/consultations/>.

This document is not legally binding and aims only at clarifying the content of the final NC EB based on feedback provided during the formal consultation period.

We note that many comments were not attributed to a specific article and gave general views or referred to cover letters. No specific responses are given on these comments in this document, although they have been taken into account, to the extent possible, in our general assessment of comments.

10.3.2 Article by article summary

Article 1 – SUBJECT MATTER AND SCOPE

Summary	<p>18 comments from 9 respondents were received on this article.</p> <ol style="list-style-type: none"> 1) Respondents request more details on the balancing products covered by NC EB and the configuration of Balancing Markets throughout the code. 2) Respondents raise concern of the wording in Article 1.2. Specifically, <ol style="list-style-type: none"> a. the use of "in particular" makes the scope unclear and b. the use of "Market Participants" which under REMIT only applies to wholesale Market Participants and furthermore does not cover Significant Grid Users.
Changes made	<ol style="list-style-type: none"> 1) No change 2) No change
Explanation for change or no change	<ol style="list-style-type: none"> 1) Concerns are legitimate but are not reduced by change in article 1.1. 2) The NC EB affects a broad range of entities. By stating that the NC EB shall apply in particular to some entities it becomes a non-exhaustive list and other entities could be covered as well.

Article 2 – DEFINITIONS

Summary	212 comments were received on article 2 on Definitions. Stakeholders generally expressed concerns about the lack of clarity, detail and readability of definitions and the lack of definitions for a number of central terms used in the NC EB. Comments were received on all definitions included in the NC EB, however especially many comments were related to the use of Relevant Area.
Changes made	All definitions in the NC EB has been checked and revised. Some terms, including Relevant Area, have been replaced with already used and well-known terms
Explanation for change or no change	<p>The NC EB follows the approach of other network codes. This means that terms already defined in other codes are not included in the list of definitions in article 2. However, where necessary definitions are further explained in the supporting document.</p> <p>To address the concerns of a very large number of stakeholders the term Relevant Area has been replaced with Responsibility Area and, where applicable, Scheduling Area as already used in NC OPS and NC OS.</p> <p>Furthermore, to ensure the link to NC LFCR Balancing Reserves has been replaced with Balancing Capacity and Sharing of Balancing Reserves has been changed to Sharing of Reserves.</p>

Article 3 – REGULATORY ASPECTS

Summary	<p>8 comments from 6 respondents were received on this article.</p> <ol style="list-style-type: none"> 1) Proposal to delete Article 3.1 on basis of the requirements in the code as it is deemed superfluous. 2) Proposal to delete Article 3.2 as it is superfluous and unhelpful in respondents' eyes.
Changes made	Deleted
Explanation for change or no change	While this article reflected fundamental principles that also apply to the code, they are deemed to be sufficiently covered in the general legal framework.

Article 4 – RECOVERY OF COSTS

Summary	<p>16 comments from 10 respondents were received on this article.</p> <ol style="list-style-type: none"> 1) Respondents propose a re-wording of article 4.1 to include TSOs and not only network operators in cost recovery. 2) Respondent proposes a rewording of Article 4.1 to ensure full transparency on amounts and methods for cost recovery 3) Respondents propose a rewording of Article 4.2 to avoid the arbitrary formulation "reasonable and proportionate" and only ensure for recovery of costs allowed to be recovered by NRAs.
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	<ol style="list-style-type: none"> 4) Respondents propose a rewording of Article 4.3 to oblige TSOs to provide information requested by NRAs and avoid the arbitrary formulation "best endeavours" 5) Finally, one respondent finds the use of "Designated Entity" questionable. If a TSO freely delegates a task to a third party, the TSO should in the end bear responsibility of proving costs to NRAs, providing required information etc.
Changes made	Reference to "Designated Entities" deleted and specification regarding the mode of cost recovery removed.
Explanation for change or no change	<ol style="list-style-type: none"> 1) 'Network Operators' include TSOs in the definition. 2) This is not a requirement in FG and is a decision of NRAs. 3) The formulation "reasonable and proportionate" is a necessary condition 4) It is deemed sufficient to oblige TSOs to use their best endeavours to provide additional information. 5) "Designated Entity" has been removed from this article.

Article 5 – CONFIDENTIALITY OBLIGATIONS

Summary	<p>3 comments from 2 respondents were received on this article.</p> <p>Concerns are raised on the wording "All entities referred to in Article 1(2) shall preserve confidentiality of the information and data...and shall use them exclusively for the purpose they have been submitted in compliance with this Network Code" as it could prevent the use of data in fulfilment of Transparency Regulation and REMIT.</p>
Changes made	Amended
Explanation for change or no change	Article 5 has been aligned to the current draft wording of NC CACM and will follow the final wording of NC CACM and NC FCA after approval by ACER & EC. REMIT and the Transparency Regulation will establish own legal basis for use of data and information.

Article 6 – CONSULTATION

Summary	<p>34 comments were received on this article. The major themes:</p> <ol style="list-style-type: none"> 1) Length of the consultation period shall be longer (8 weeks by several comment) 2) Additional items to be consulted among which several issues related imbalance settlement
Changes made	Obligation specified to TSOs as responsible parties.
Explanation for change or no change	<ol style="list-style-type: none"> 1) Keep 4 weeks. This is in line with other network codes and also in accordance with Framework Guideline. Lengthening of consultation period would increase implementation time.

	2) Terms & Conditions are consulted which covers widely specific issues asked to be included in the Consultation
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Article 7 – REGULATORY APPROVALS

Summary	180 comments were received on this article. The major themes: <ol style="list-style-type: none"> 1) Approval shall be transferred from national/CoBA level to All NRAs. 2) Delete sub-paragraphs items based on changes in the articles where item subject for approval is described.
Changes made	<ol style="list-style-type: none"> 1) Approvals are split into different geographical levels. 2) Article updated.
Explanation for change or no change	<ol style="list-style-type: none"> 1) Allocation of approvals to different levels has been re-evaluated in accordance with the Framework Guidelines and paragraphs 2-6 capture regions from all of Europe to the national level. 2) This article reflects changes in the rest of the code.

Article 8 – PUBLICATION OF INFORMATION

Summary	28 comments from 11 respondents were received on this article. <ol style="list-style-type: none"> 1) The FG requires (p25prgr4) that NC EB shall describe the necessary information to be published by the TSOs that is needed for BRPs to be able to help to balance the system and/or to restore its balance. This should be reflected in NCEB. 2) Respondent suggests to include time limit in 8.3.a as "Sufficiently in advance" is not clear 3) Respondents suggest to deleting subparagraphs b and d referring to Reservation of Cross Zonal Capacity as this should not be allowed by NCEB. 4) Respondents request a definition of Cross Zonal Gate Opening Time. 5) Respondents request that 8.4 and 8.5 explicitly requires information to be published in English and in 8.4 that information can be published by, where applicable, another designated entity 6) Respondent proposes to specify the frequency of information in article 8.4 and 8.5 7) Respondent finds the use of the wording Relevant Area in article 8.4 unclear. Proposal to substitute with the term Bidding Zone
Changes made	<ol style="list-style-type: none"> 1) No change. 2) No change. 3) No change. 4) Change. Cross Zonal Gate Opening Time is no longer used in the NC EB. 5) Change. Information in the new article 8(3) will be published in English and a delegation article is included. 6) No change 7) Change. Relevant area is no longer used.

Explanation for change or no change	<ol style="list-style-type: none"> 1) The TSOs are obliged to provide information on volumes and prices of Balancing Energy bids, information of reserved capacity, and information on algorithms and methodologies, all of which will be available to BRPs. 2) The FG does not require the setting of a time limit for the publication of information in 8.3.a. The wording "sufficiently in advance" could be acceptable. 3) The approaches for provision of Cross Zonal Capacity are in line with FG. No changes to subparagraphs b and d are proposed. 4) Cross Zonal Gate Opening Time has been removed from the entire NC EB to streamline and increase readability. 5) To ensure equal treatment of Market Participants information should be published in English. A general delegation article is furthermore included in the NC EB to allow for other entities to fill these functions 6) Sufficient to state that information shall be published in time to avoid creating competitive advantage to any individual or group of individuals 7) Previously used area definitions are now used in the NC EB to avoid lack of clarity.
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Article 9 – GENERAL OBJECTIVES OF THE BALANCING MARKET

Summary	<p>41 comments were received on this article. The major concerns emerging are:</p> <ol style="list-style-type: none"> 1) Text is too general. Objectives should be more focused per Regulation 714/2009. 2) Implement cost reflective balancing arrangements. 3) Balancing cannot be developed regardless of the other market timeframes and liquidity in Balancing should not be prioritised over liquidity in other timeframes. 4) Objectives should be as focused as possible. 5) Energy storage technologies should be recognised. 6) This code should only support TSO's to ensure Operational Security. 7) Clear procurement rules that enable the participation in the Balancing Market. 8) Only including benefits for the consumers disregarding the producers imply that the European welfare will not be correctly calculated. Social welfare due to renewable energy sources is difficult to quantify. <p>The cross-article concerns:</p> <ol style="list-style-type: none"> 1) All Articles fail to set clear procurement rules or how to facilitate DSR. 2) Other cross-article references: Article 1, 22, 40 (v1.22 referencing). 3) Application of the code to Market Participants.
Changes made	<ol style="list-style-type: none"> 1) Paragraph 9.1 was removed. 2) No change in this article. 3) Text redraft: "Fosters the liquidity of Balancing Markets while preventing undue distortions from within the internal market in electricity". 4) Objectives reviewed to focus them, align with Framework Guidelines and reorder into a more natural order.

	<ol style="list-style-type: none"> 5) Energy Storage has been explicitly recognised. 6) No change. 7) No change. 8) The reference to "provide benefits for consumers:" has been removed entirely as the reference to "Social Welfare" should cover both benefits to consumers and benefits to producers.
Explanation for change or no change	<ol style="list-style-type: none"> 1) Paragraph 9.1 was removed as it was agreed that it was too general and added nothing new to the code that is not covered elsewhere. This also removes the explicit link to Market Participants/Significant Grid Users from this article. 2) Article GENERAL SETTLEMENT PRINCIPLES covers "(i) establish adequate economic signals which reflect the Imbalance situation". 3) Liquidity of Balancing Market now linked with the overall internal market in Electricity. 4) Comment accepted. 5) Although the code should not discriminate, positively or negatively, between different technologies and the code should accommodate all service providers, energy storage has also been explicitly mentioned in this article. The objective of the code is to create a level-playing field for all possible providers of Balancing Services. 6) This article requires the facilitation of objectives including ensuring Operational Security rather than meeting the objective of ensuring Operational Security. 7) Due to the complexity of Balancing and therefore the phased approach to developing the grand pan-European market, it is not possible now to include detailed rules in the code. Rather than detailing such target models, the NC EB lays out the processes to develop and implement the steps towards realising these efficiency gains while maintaining Operational Security. 8) Comment accepted.

Article 10 – CREATION OF COORDINATED BALANCING AREAS

Summary	<p>49 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) Include reference to Specific Products / introduce reference to NC LFCR. 2) Lack of ambition / details on CoBA integration. 3) Make Imbalance Netting an obligation/reference to targets & clarify what it implies/relation to avoidance of counteracting activation. 4) Clarify reference to applicability / member state issue. 5) Clarify how it is ensured that peripheral TSOs can form part of a CoBA. 6) Increase level of involvement of DSOs. 7) Reduce complexity of CoBA set-up. 8) Publication / involve Market Participants in FW. 9) More harmonisation is required. 10) Merge FW with T&C.
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	<p>11) Limit exchange of balancing services to CoBA / do not allow exchange beyond CoBA.</p> <p>12) No limitation of inter CoBA cooperation to TSO-TSO Model.</p> <p>13) Increase transparency in way how TSOs cooperate.</p> <p>14) Replace intentional with measurable requirements.</p> <p>15) Improve clarity/reference to targets.</p> <p>16) Publish data which is exchanged between TSOs.</p> <p>17) ACER should not only be notified, but also take action on incompatibilities.</p> <p>18) Clarify what incompatibilities refer to.</p>
Changes made	<p>1) 1)-3) No change.</p> <p>4) Change.</p> <p>5) Change.</p> <p>6) 6)-13) No change.</p> <p>14) Wording improved.</p> <p>15) Wording improved, new reference, but the introduction of the new articles on the intermediary targets add clarity and ambition on the way to reach the targets.</p> <p>16) No change</p> <p>16) No change, Transparency Regulation and Balancing Code contain all transparency requirements ensuring market functioning</p> <p>17) Amendment to Article 11(8): All TSOs shall report to the Agency as soon as incompatibilities between the actual development within the CoBAs and the developments foreseen in the regional or the European integration model in accordance with CHAPTER 2 SECTION 2 are identified.</p> <p>18) Wording improved.</p>
Explanation for change or no change	<p>1) No change, because that would not be a sufficient requirement / introduce reference to NC LFCR not taken up, not needed.</p> <p>2) More comprehensive articles on intermediary targets create ambition.</p> <p>3) Not done, because flexibility in cooperation is key to implement the targets. Imbalance Netting is to be used throughout the code and definition for that is to be updated.</p> <p>4) Included in new version of the NC.</p> <p>5) Additional sentence in NC should be sufficient to ensure the appropriate inclusion of peripheral TSOs.</p> <p>6) Topic of Art. 12.</p> <p>7) A certain level of governance and conditions is needed.</p> <p>8) The T&C are being consulted and approved.</p> <p>9) -</p> <p>10) the framework for the establishment of T&C is being approved & is a crucial element for integration and harmonisation; therefore harmonisation within CoBA shall be ensured, T&C only local</p> <p>11) flexibility in the way how TSOs & CoBAs cooperate are crucial to reach the ambitious targets of the NC, so a limitation of that would hinder reaching the targets</p> <p>12) the TSO-TSO Model is the target model of the NC</p>

	<p>13) various items are consulted and all relevant ones for market functioning, participation and integration are being consulted or approved</p> <p>14) word "loyally" was deleted</p> <p>15) improve clarity/reference to targets</p> <p>16) all data necessary for market participation is required to be published in transparency regulation and this NC</p> <p>17) no change along the lines of the first set of comments, as NC cannot grant new competences to ACER</p> <p>18) Change proposals clarify what are incompatibilities and answers relevant comments.</p>
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Article 11 – ROLE OF THE TSOs

Summary	<p>76 comments were received on this article. The major concerns emerging are:</p> <ol style="list-style-type: none"> 1) The issue of 'unanimity' and decision making and 'loyally'. 2) Little support for TSO to offer the Balancing Services themselves as it violates Third Package provisions and is perceived to be a price issue not a security issue. However it is important to be maintained, subject to Regulatory approval by the NRA, when it is not possible to acquire the needed balancing resources from the market. 3) 'designation' vs. 'delegation' Differentiate between the assignment of tasks to a designated entities with responsibility and the delegation of tasks without responsibility 4) There should not be exchange or netting outside the CoBA structure. 5) While TSOs can facilitate Balancing Markets, conflicts of interest can be created if they are also responsible for them. 6) Merchant interconnectors are effectively dependent on market demands controlled by other System Operators to support flows, and it is not clear what balancing services they would be expected to procure and whose Operational Security is being safeguarded.
Changes made	<ol style="list-style-type: none"> 1) Unanimity is kept, loyal cooperation removed. 2) "If foreseen under national law" removed. 3) Delegation of tasks moved to new Article Delegation of Functions, which covers delegation. 4) No change. 5) No change. 6) No change
Explanation for change or no change	<ol style="list-style-type: none"> 1) This has undergone legal review and is a cross-codes issue which may receive an update in the further process 2) Note approval for a TSO to offer balancing services themselves needs to be granted by the NRA. Interconnectors facilitate the provision of balancing but cannot offer Balancing Services themselves and contractual arrangement for this facilitation is not covered by this code. 3) Moved for clarity and term design has been removed again for clarity. It is expected that any delegation would have a contract with

	<p>termination clauses as standard in case the third party fails in their tasks/responsibility.</p> <ol style="list-style-type: none"> 4) There may be cooperation as CoBAs are established. 5) In accordance with the Framework Guidelines the TSOs are responsible for organising Balancing Markets. 6) Treatment of merchant interconnectors is a cross code issue and requirements are treated by license conditions.
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Article 12 – COOPERATION WITH THE DSOs

Summary	<p>29 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) DSOs want to be have more information during the process (e.g.: bids, schedules, activations...) in order to be able to identify constraints in the distribution grid. 2) Consistency with other codes (e.g. NC OS, NC LFCR) in terms of information exchanges. 3) Paragraph regarding curtailment costs sharing should be reviewed or deleted.
Changes made	<ol style="list-style-type: none"> 1) No change. 2) Change. 3) Change.
Explanation for change or no change	<ol style="list-style-type: none"> 1) Information exchanges to DSO on grid constraints are not handled in NC EB. 2) The article has been simplified as some provisions regarding cooperation between TSOs, DSOs and BSPs were already included in the NC LFCR. 3) The paragraph regarding curtailment costs sharing has been reworded in order to enhance clarity.

Article 13 – ROLE OF THE BALANCING SERVICE PROVIDERS

Summary	<p>36 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) Association between BSP could be to one or more than one BRP, according to article 39. Article 13 should be written in accordance. 2) Stakeholders request for the introduction of definitions of “Balancing Gate Closure Time”. Since the draft published for Public Consultation, the requested definition have been introduced. 3) A reference to the “obligation” for procurement is in the draft for Public Consultation. Stakeholders request to remove everything dealing with obligation, and accordingly to article 22(1)(c). 4) Request to add the precision that BSP with contracts shall offer bids on “relevant time period and products”.
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	<p>5) Point out that BSP shall offer reserve bids only to the connection TSO ... while it could be open to other TSOs where TSO BSP model is applied.</p> <p>6) request clarity for activation of bids by the TSO before / after GCT</p>
Changes made	<p>1) Introduction of relevant definitions for Gate Closure Time, it was a lack of the draft code for Public Consultation.</p> <p>2) Consistency within the code of the matter of association 1 BSP / several BRP. While some article deals with a 1 to 1 associations, others deals a 1 to many. Moreover, code relevant articles have been redrafted in order to avoid the word "association".</p> <p>3) Clarity that BSP with contract for reserve shall submit relevant (products & timeframe) energy bids. Indeed we cannot request to offer "at least" as many bids as contracted. BSP with contract have to offer the contracted volume, and all BSP are allowed to offer additional energy bids</p> <p>4) Consistency shall be ensured with BSP TSO model for reserve procurement, where BSP is allowed to offer reserves bids not only to its Connecting TSO. Exemption have been introduced in the article dealing with TSO BSP model.</p>
Explanation for change or no change	<p>1) no change : replace "Relevant Area" by "Bidding Zone" ... because we have to cover all possibilities of links and size of bidding zone / control area / TSO ...</p> <p>2) No change: no introduction of the term "without price caps" when BSP submit their bids. Indeed, it refers to article 22 and not to article 13.</p> <p>3) No introduction of definition of terms "providing group" and "providing unit", whereas they are described in NC LFCR.</p>

Article 14 – ROLE OF BALANCE RESPONSIBLE PARTIES

Summary	<p>17 comments were received on this article. The major themes emerging are:</p> <p>1) Introduce the possibility and appropriate wording to delegate task of Accounting and Settlement concerning the BRP, in accordance with 11.4.</p> <p>2) Better clarity on rules to approve/reject modification after XZ GCT are required.</p> <p>3) Stakeholder are concerned that the main targets of BRP are not enough highlighted.</p>
Changes made	<p>1) Change.</p> <p>2) No change.</p> <p>3) Change.</p>
Explanation for change or no change	<p>1) Covered by the new article 9 on Delegation of Functions</p> <p>2) No additional rule in the code to describe where BRP are allowed or not to change position after GCT. This kind of rule shall be in the terms and conditions defined by each TSO.</p>

	3) Introduction of targets of BRPs to highlight that BRP are expected to be balanced and are responsible for settlement.
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Article 15 – FUNCTIONS IN COORDINATED BALANCING AREAS

Summary	39 comments were received on this article. The major themes emerging are: <ol style="list-style-type: none"> 1) exchange of reserves should be the base case in all CoBAs 2) clarify that the functions of a CoBA are common to the CoBA 3) no obligation for BSPs to offer balancing services 4) abandon Transfer of Obligation Function 5) make transfer of obligation obligatory 6) introduce possibility of independent audit commissioned by participants or NRA (besides TSO monitoring)
Changes made	<ol style="list-style-type: none"> 1) No change. 2) Change. 3) No change. No obligation for BSPs to offer balancing services. 4) Partly change. 5) Party change. 6) No change.
Explanation for change or no change	<ul style="list-style-type: none"> - A CoBA can be formed only for the exchange of energy. - Clarification of who is doing what is introduced throughout Chapter 2. - There is no obligation for BSPs to offer all balancing services. - Stakeholder requests are not possible to align. - Stakeholder requests are not possible to align. - -

Article 16 – TERMS AND CONDITIONS RELATED TO BALANCING

Summary	113 comments were received on this article. The major themes emerging are: <ol style="list-style-type: none"> 1) Deadlines (development of Framework and of the T&Cs) need to be consistent and clarified. 2) The framework for the T&Cs should be independent from the dispatch arrangement (Central Dispatch or SelfDispatch) 3) More involvement of stakeholders (DSOs, Designated Entities...) in the development of the Framework 4) Clarify responsibilities and Terms and Conditions in case of aggregation 5) Clarify the relationship between the CoBA and the product exchanged within the CoBA 6) Clarify the association BSP-BRP 7) Reassessment of T&Cs: review the conditions for the entitlement and/or the obligation for the TSO to launch a reassessment of the T&Cs
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	<p>8) Possible obligation for BRPs to provide balanced positions in DA: Review and clarify the intention and take into account possible impacts on ID market</p> <p>9) T&Cs for BSPs: Add new provisions (for example to respect confidentiality obligations and/or include an appeal process in case of non-compliance)</p>
Changes made	<p>1) No change.</p> <p>2) Change.</p> <p>3) No change.</p> <p>4) No change.</p> <p>5) Change.</p> <p>6) Change.</p> <p>7) No change.</p> <p>8) No change.</p> <p>9) No change.</p>
Explanation for change or no change	<p>1) The approval of the framework is already included in the approval of the proposal of CoBA submitted by the TSOs, thus this framework should be defined by them. The stakeholders' involvement is ensured as the terms and conditions will be consulted on, transparent and published.</p> <p>2) Last sentence regarding possible specificities for Central Dispatch in the development of the framework has been deleted</p> <p>3) The development of the framework will be the responsibility of TSOs and the framework will be subject to Regulatory Approval.</p> <p>4) The figure of Aggregator is already defined in the DCC, so this figure has not been further explained in the NC EB in order to avoid redundancy. The terms and conditions for BSPs, either aggregated or not, are clearly defined in the NC.</p> <p>5) A clearer description is provided with the new target articles 12-19</p> <p>6) The relationship between BSP and the BRP(s) has been described in articles 23, 24 and 26.</p> <p>7) The NRA should be the entity entitled to launch the reassessment. Any other entity is able to ask the NRA for a request of reassessment of T&Cs.</p> <p>8) The entitlement for TSOs to ask for balanced positions in DA is included in the FG and is subject to approval by the NRA, so this provision has been maintained in the code.</p> <p>9) Covered by article 5 on Confidentiality</p>

Article 17 – REQUIREMENTS FOR STANDARD AND SPECIFIC PRODUCTS

Summary	<p>55 comments were received on this article. The major themes emerging are:</p> <p>1) Stakeholders request better clarity for definition and use of Standard Products vs. Specific Products. Current drafting put them at the same level but it should be clearer that Specific Products should be an exception.</p>
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	<ol style="list-style-type: none"> 2) Specific Products shall not only be visible but also shared for Exchange of Balancing Energy, in accordance with FG EB. 3) It is requested that the definition of products could be done earlier than one year after entry into force of the network code. 3 month is proposed 4) Additional characteristics for products are required on direction/sign, reliability, and fixed start/stop time to cover schedule shifting. 5) More clarity is requested when referring to the NC LFCR. 6) A clear definition of "avoid distortion" for introduction of Specific Products is requested 7) A first set of Standard Products is requested in the NC EB 8) Need for more consistency between 17.2 and 17.5 (ENTSOE vs. CoBA).
Changes made	<ol style="list-style-type: none"> 1) Partly change. 2) No change. 3) No change. 4) No change. 5) Partly change. 6) No change. 7) No change.
Explanation for change or no change	<ol style="list-style-type: none"> 1) It has been made clearer that Standard Products are defined from some standardised characteristics of products. 2) Specific pProducts shall be shared and exchanged only if System Security is not compromised. 3) The timeframe for the first delivery of a set of Standard Products is satisfactory. The current draft is in line with framework guidelines and ENTSO-E started to work on the issue. 4) Introduction of new characteristic "reliability" and "sign". Indeed TSO want to receive, compare and use similar products for a safe use and to maintain system balance. To achieve such targets we require firm products and reliability cannot be a characteristic. "Sign" is already included in the volume. A new characteristic on "minimal duration between end of activation and another activation" has been added to allow a better participation of products which need a recovery period. 5) It has been clarified that the NC LFCR rules to be respected by standard products are "FRR and RR Minimum Technical Requirements". 6) Introduction in the core code of a set of Standard Products to be applicable at entry into force of the NC EB. Indeed is could not be foreseen how the products will change in the future, and ENTSO-E is compliant with guidelines with a timeframe on one year after entry into force of the NC EB.

Article 18 – THE USE OF STANDARD AND SPECIFIC PRODUCTS

Summary	<p>2 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) A proposal to add additional aim of usage balancing products to maintain the integrity of local and cross-border intraday trading.
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	2) Specific Products may be used ONLY if standard ones are insufficient - supporting Standard Products.
Changes made	<p>Article deleted</p> <p>In article 17(6) (24(6) in v1.28) there was added requirement that Specific Product can be defined if "<i>(a) Standard Products are not sufficient to operate Balancing and respecting Operational Security or enable the participation of resources that cannot be offered through Standard Products</i>".</p>
Explanation for change or no change	<p>1) The integrity of ID markets has broader scope than used products, therefore on of general requirement towards the code is "facilitate the efficient functioning of other electricity markets, in time frames different from the Balancing Markets" (Art. 9/ 10 in v.128). The relations between IDM and Balancing Market are also prescribed in article "BALANCING ENERGY GATE CLOSURE TIME". The intraday markets are not in the scope of NC EB, therefore it is not appropriate to create more detailed requirements in the NC EB.</p> <p>2) No change in article 18: Priority for Standard Products already included in other articles. Specific Products require approval of NRA (Art.7) and could be introduced only if they are insufficient and do not significantly distort market (Art 17/ 24 in v.1.28).</p>

Article 19 – SELECTION AND CONVERSION OF PRODUCTS

Summary	<p>37 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) BSP shall be responsible for delivery only according to originally submitted offers, TSO is the only responsible for delivery according to converted offers. 2) Request for more details regarding conversion in CDS. 3) If Specific Products can be converted into standard ones, they should mandatory treated as standard ones. 4) Specific Products shall be listed directly in CMOL. 5) Doubts if Specific Products should/could be converted into standard ones. 6) BSP in CDS system should submit offers directly to common procurement (without conversion). CDS TSO should use Specific Products, unshared bids instead conversion mechanism. 7) Central Dispatch systems should not be allowed (or allowed only in transitory period). 8) Central Dispatch systems should not exchange Balancing Services and should not participate in any CoBA.
Changes made	<ol style="list-style-type: none"> 1) No change 2) Change. Separation of articles regarding Central Dispatch systems and providing more detailed rules regarding bids modification process in Central Dispatch systems.

	<ul style="list-style-type: none"> 3) No change. 4) No change. 5) No change. 6) No change. 7) No change. 8) No change.
<p>Explanation for change or no change</p>	<ul style="list-style-type: none"> 1) It is obvious that BSP is responsible for delivery only according to his offers and agreed contract. TSO may not change this contract unilaterally, which applies also in case of conversion made by TSO. 2) Description of offer modification in CDS was moved to separate article and expanded. 3) If given TSO uses Specific Products he needs it to balance systems, and that is why in many cases he cannot transform all of them into standard ones, because he will lost their special properties. TSOs have to make all Specific Product visible for other TSOs according to Art 17/(24 in v 1.28). (see also point 4). 4) Listing Specific Products is addressed in Art. 17 (24 in v.128). Art 19 gives just additional possibility to convert them to Specific Products before submission to the CMOL, increasing in this way market liquidity (by decreasing products granularity). 5) Before defining a standard and Specific Product we cannot presume that conversion specific=>standard could not be possible. Some TSO may e.g. need very fast reserves, which could be potentially converted to the Standard Product, which would not require so short activation time. 6) Proposed conversion mechanism is the only way to include in a common merit order list the balancing offers from central and Self-Dispatch systems, which are originally incomparable. After conversion of Central Dispatch offers we will obtain offers which could be directly use in common procurement process. Specific Products and unshared bids will cause isolation of Central Dispatch systems, while conversion mechanism ensure full integration of central and Self Dispatch systems. Moreover special products and unshared bids are interim solution, while conversion mechanism will be enduring solution. 7) Framework guidelines clearly states that NC should take into account existence of different balancing mechanisms (among other central and Self Dispatch) and allow for smooth integration of such systems. Each system has a unique mixture of features like: system size, generation mix, transmission system characteristic, uncertainty level; determining which market model, central or Self Dispatch, will be more suitable solution. 8) The aim of NC is to create fully integrated European Balancing Market. Leaving Central Dispatch system outside this mechanism is against this aim. Bids modification mechanism allow for full integration of central and Self Dispatch systems within one cross-border procurement mechanism.

Summary	<p>38 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) Lack of definition, consistency of definitions, and definitions for different GCT are confusing: Reference to Definition Balancing Energy Gate Closure Time is missing. 2) GCT shall be as close as possible to real-time, and, in any case, no further than forty five minutes prior to real-time. 3) Connecting TSOs shall qualify unavailable bids as invalid within the relevant Common Merit Order Lists. Unexpected unavailable volumes of Balancing Energy Bids shall be reported if applicable to the DSO by the Connecting TSO without delay. 4) Fully harmonised balancing gate closure for whole Europe or at least coordinated within a COBA and in any case, no further than one hour prior to real-time. 5) The Balancing Gate Closure Time is applicable to all Balancing Energy Products, since Specific Products can also be exchanged, in accordance with Article 19. 6) Interaction with the intraday market: The Balancing Gate Closure Time shall be before Intraday Cross Zonal Gate Closure Time. ID-Trading shall be possible until 15 min. before real-time. 7) BSPs should have sufficient time (e.g. at least 15 minutes) to submit new balancing bids or modify the ones already presented taking into account the outcome of the intraday market.
Changes made	<ol style="list-style-type: none"> 1) Change. 2) No change. 3) Change. 4) Change. 5) No change. 6) No change. 7) No change.
Explanation for change or no change	<ol style="list-style-type: none"> 1) The Balancing Energy Gate Closure Time is described in the new article 28. Balancing Energy Gate Closure Times will be defined for each Balancing Energy Standard Product per CoBA. 2) Gate closure times will be after the cross zonal intraday gate closure time for manually activated bids but potentially before the cross zonal intraday gate closure time for automatically activated bids and the Integrated Scheduling Process bids used in Central Dispatch systems. 3) Included in the new article 28(5). 4) Gate closure times for each Balancing Energy Standard Product will be harmonised within the CoBAs. 5) The CoBA Balancing Energy Gate Closure Times will only apply to Standard Products. Specific Products can be converted into Standard Products to be placed on the Common Merit Order List. 6) The NC EB cannot prescribe the ID gate closure time. 7) Balancing Energy Gate Closure Times will be defined by the CoBAs.

Article 21 – FALL-BACK PROCEDURES

Summary	<p>13 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) Arbitrary formulation "... use their best endeavours...." shall be replaced with measurable terms. 2) System Security is not defined.
Changes made	<ol style="list-style-type: none"> 1) No change. 2) Modification of text.
Explanation for change or no change	<ol style="list-style-type: none"> 1) No guarantee can be given that there is time or needed facilities to perform fall-back solution in pre-defined manner. However, consistency to latest versions of System Operation codes needs to be checked. 2) Consistency in terminology.

Article 22 – GENERAL PROVISIONS

Summary	<p>115 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) Procurement should be based on market-based method only. Obligation to participate on the market with reserves should be foreseen as a last measure resort. 2) Definition of "integrated procedure" is missing. 3) BSPs in CDS should be adequately compensated in case participation in the XZ IDT is impossible due to the activation. 4) Long term contract should be conditioned by NRA approval. Part of reserves could be procured on long term base, part on short base. 5) Difference between transfer of obligations and secondary market is not clear. Improve wording. 6) Transfer of obligation should be allowed between areas within the same CoBA. 7) Methodology how the XZ capacity should be ensured in case of transfer of obligation is missing. 8) What is meant by security constraints when using Reserve procurement optimization function? 9) Over what period the costs in case of using Reserve procurement optimization function should be minimised. 10) The organisation of a secondary market could be possible for other parties than TSOs too. 11) Improve wording of the whole article to increase readability.
Changes made	<ol style="list-style-type: none"> 1) Methodology changed on market-based. 2) Definition of integrated procedure added into definitions section. 4) Contracts longer than 12M are to be approved by NRA. Shorter contracts required only in case of a common procurement of two or more TSOs. 5) Two new articles on Transfer of Balancing Capacity were added.

	<ul style="list-style-type: none"> 6) Allowed. 7) Chapter on Cross Zonal Capacity includes such provisions. 10) New general article on delegation of functions is introduced. 11) The article is restructured. There are two sections with two sub articles in each section. First sub article describes procurement and the second one describes Transfer of Balancing Capacity. Sections are divided on a national level (one TSO) and on a CoBA level (two or more TSOs).
Explanation for change or no change	<ul style="list-style-type: none"> 3) General provisions of the NC already cover that. 8) Explained in the supporting document. 9) Explained in the supporting document.

Article 23 – GENERAL PROVISIONS

Summary	<p>38 comments were received on this article. The major themes emerging are:</p> <ul style="list-style-type: none"> 1) Exchange or Sharing should be mandatory, not optional. 2) Align wording of “Exchange” and “Sharing” with NC LFCR terminology. 3) Long term contracts should be avoided. 4) Procurement should be performed in all areas within the same CoBA at the same time. 5) Pricing of balancing reserves exchanged or shared should be based on marginal pricing.
Changes made	<ul style="list-style-type: none"> 2) Wording has been aligned with NC LFCR terminology. 3) Newly introduced rule: if TSOs procure commonly (form a CoBA) the maximum duration of a contract without necessity to gain NRA approval is one month. Longer duration is subject to NRA approval. 4) Wording improved so it specifically mentions such obligation.
Explanation for change or no change	<ul style="list-style-type: none"> 1) Main goal of the NC is EU-wide Balancing Market-based on common activation of Balancing Energy Bids out of standardised set of balancing energy products. Exchange and sharing of reserves is not necessary to reach the goal of this NC. 5) No change. Such requirement would lead on unacceptable increase in costs for TSOs, respectively for end consumers.

Article 24 – TRANSITIONAL PROCUREMENT OF BALANCING RESERVES IN FORM OF A TSO-BSP MODEL

Summary	<p>33 comments were received on this article. Stakeholders requests that the TSO-BSP model should be allowed until a “full TSO-TSO model” is implemented.</p>
Changes made	<p>Change.</p>

Explanation for change or no change	For each target on Balancing Energy Bids a TSO-TSO model is foreseen. Existence of TSO-BSP model has been conditioned by implementation of the European integration model.
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Article 25 – GENERAL PROVISIONS

Summary	<p>97 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) Different views on marginal pricing, suggestions that balancing pricing has also impact to functioning of intraday and this needs to be taken into account when pricing method is proposed. 2) Article 25.3 allowing different pricing for products not participating to CoBA is confusing. 3) Pricing method shall be same for all products. 4) Strong opposition of possibility for TSO to require participation of unused capacity to balancing. 5) Deviation for Central Dispatch system is not supported.
Changes made	<ol style="list-style-type: none"> 1) No change. 2) No change. 3) No change. 4) Included in Terms and Conditions of Balancing. 5) Special treatment for Central Dispatch system is not included.
Explanation for change or no change	<ol style="list-style-type: none"> 1) General objectives of Balancing Market cover widely items that shall be taken into account when pricing method is defined. 2) Paragraph clarifies the possibilities, when no COBA for that certain product is established and product is not exchanged. 3) Standard Products and their activation principles may vary remarkable and so also different pricing methods make sense, like e.g. auction/continuous trade. 4) Measure helps TSO to secure required balancing resources and it is also specifically allowed by FG EB. 5) Application of different pricing methods is covered by other paragraphs and no special treatment for Central Dispatch is required.

Article 26 – GENERAL PROVISIONS

Summary	<p>46 comments were received on this article. The major themes emerging:</p> <ol style="list-style-type: none"> 1) The reference to article 58 needs to be checked. Article 58 contains the targets but it does not contain content concerning the Activation Optimisation Function. Article 58 does not mention a specific timeline for the establishment of the Activation Optimisation Function. <ol style="list-style-type: none"> a. Proposal by EFET: Within 12 months of the entry into force of the NC EB, all TSOs shall establish detailed rules for the activation of Balancing Energy consistent with Article 11(1 - new article) and 17(5) and 17(6).
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	<p>b. Proposal by EFET: TSOs shall ensure that activation of balancing energy complies with the requirements set out in Article 11 and shall, in any case, avoid activation before Intraday Gate Closure wherever possible for both standard and Specific Products.</p> <ol style="list-style-type: none"> 2) More transparency for deviations requested: deviations shall be reported within 1h and the purpose of the activation shall be made public (e.g. redispatch). 3) Stakeholder request that the Exchange of Balancing Energy shall be based on a TSO-TSO Model with common merit order. 4) The volume limit on unshared bids should include both bids from the Common Merit Order and from Specific Products. Furthermore, unshared bids shall be subject to a market consultation process and NRAs approval and the amount of unshared bids shall be shall be published. Unshared bids shall be updated quarterly: The balancing requirements change more on a seasonal than on a yearly basis. Hence a seasonal update of the market conditions might be more useful than a yearly update. 5) The NC EB should not make rules for alert state.
Changes made	<ol style="list-style-type: none"> 1) Change. 2) Change. 3) Change. 4) Change. 5) Change.
Explanation for change or no change	<ol style="list-style-type: none"> 1) The deadline for the establishment of the Activation Optimisation Function (Now article 36) follows the new target articles in CHAPTER 2 SECTION 2. 2) Included in article 36(3) that TSOs shall publish information in a timely manner. 3) In the European integration model the exchange of balancing energy will be based on a TSO-TSO model with a Common Merit Order List. 4) The methodology for the calculation of unshared bids will be subject to Consultation (Article 6) and Regulatory Approval (Article 7). The amount of unshared bids shall be published following Article 8(4). The volume limit on unshared bids will cover both Specific Products and Standard Products not shared on the Common Merit Order List. 5) The new Article 1(4) states that the NC EB only covers Normal State.

Article 27 – ACTIVATION MECHANISM OF BALANCING ENERGY

Summary	<p>27 comments were received on this article. The major themes emerging:</p> <ol style="list-style-type: none"> 1) Technical constraints shall be taken into account by the Activation Optimisation Function and be made public. 2) CMOs shall include as well Specific Products and Specific Products shall be made available for XB exchange.
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	3) 3) Definition in Art. 2 missing: "Gate Closure Time of Transmission System Operator Energy Bid Submission"
Changes made	<ol style="list-style-type: none"> 1) No change. 2) No change. 3) Change.
Explanation for change or no change	<ol style="list-style-type: none"> 1) Outside the scope of the NC EB. 2) CMOs will be defined per Standard Product. A Specific Product can be converted into a Standard Product following Article 26 and submitted to a CMO. 3) Term no longer used.

Article 28 – OPTIMISATION PRINCIPLES OF ACTIVATION FROM COMMON MERIT ORDER LISTS

Summary	<p>18 comments were received on this article. The major themes emerging:</p> <ol style="list-style-type: none"> 1) Article should be made consistent with Article 27. 2) Proposal to agree only on compatible products, thus the compatibility does not need to be ensure by the Activation optimisation function.
Changes made	<ol style="list-style-type: none"> 1) Change. 2) No change.
Explanation for change or no change	<ol style="list-style-type: none"> 1) Wording of the article 37(9) ensures consistency with other paragraph in Article 37. 2) Products on different common merit order lists are per definition not fully compatible or similar.

Article 29 – USE OF CROSS ZONAL CAPACITY FOR BALANCING SERVICES

Summary	<p>27 comments were received on this article:</p> <ol style="list-style-type: none"> 1) Several comments on lack of clarity due to: lack of definitions, ambiguous links to CACM and vague formulations. 2) Several comments want to forbid all kind of reservation or just reservation not based on co-optimisation. 3) Some comments suggest to introduce new methodologies like counter-trade or BSP using CZC to exchange reserves.
Changes made	<ol style="list-style-type: none"> 1) The text is heavily restructured and changed in order to make the text clearer and to increase consistency with other codes. 2) The request to forbid any kind of reservation/allocation of Cross Zonal Capacity will not be met. However, the main methodologies to be used are described in more detail. 3) Use of counter trade is not introduced as methodology.
Explanation for change or no change	<ol style="list-style-type: none"> 1) Reservation of Cross Zonal Capacity will in most cases be necessary to enable Exchange of Balancing Capacity or Sharing of Reserves, which potentially is followed by increased socio economic welfare.

	2) It may reduce security of supply if real-time countertrading is necessary to ensure availability of Balancing Capacity and the total procurement costs of Balancing Capacity will be unclear at the time of procurement
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Article 30 – PRICING OF CROSS ZONAL CAPACITY FOR THE EXCHANGE OF BALANCING SERVICES OR SHARING OF BALANCING RESERVES

Summary	<p>40 comments received on this article, mostly reflecting the same as for previous article with regard to opposition of using capacity for exchange of Balancing Reserves. Some comments suggesting changes in the pricing mechanism. Several comments opposing on charges and including losses.</p> <ol style="list-style-type: none"> 1) Several comments on unclarity due to: lack of definitions, link to CACM and vague formulations in draft. 2) Several comments want to forbid all kind of reservation or just reservation not based on co-optimisation. 3) Some comments suggest to introduce new methodologies like counter-trade or BSP using CZC to exchange reserves.
Changes made	<ol style="list-style-type: none"> 1) The text is heavily restructured and changed in order to make the text clearer and to increase consistency with other codes. 2) The request to forbid any kind of reservation/allocation of Cross Zonal Capacity will not be met. However, the main methodologies to be used are described in more detail. 3) Use of counter trade is not introduced as methodology.
Explanation for change or no change	<ol style="list-style-type: none"> 1) Reservation of Cross Zonal Capacity will in most cases be necessary to enable the Exchange of Balancing Capacity or Sharing of Reserves, which potentially is followed by increased socio economic welfare. 2) It may reduce security of supply if real-time countertrading is necessary to ensure availability of Balancing Capacity and the total procurement costs of Balancing Capacity will be unclear at the time of procurement

Article 31 – APPROACHES FOR THE PROVISION OF CROSS ZONAL CAPACITY FOR BALANCING RESERVES

Summary	32 responses received; Most stakeholders want to forbid reservation and many also want to forbid allocation. CZC available after ID should be used or released with Countertrading.
Changes made	Restructure the article into Balancing Capacity and Balancing Energy issues and combine it with article 32 and also maybe include it into the procurement sections of Balancing Energy and Balancing Capacity. General content of the article should be kept.
Explanation for change or no change	

Article 32 – CAPACITY PROVISION METHODOLOGIES FOR BALANCING SERVICES

Summary	16 responses received; most propose to delete the article as it is covering reservation issue what should be forbidden by NC (see also previous comments); alternatively insert market consultation in paragraph 3 and change "reservation" to "use/release" of CZC.
Changes made	The article is restructured into Balancing Capacity and Balancing Energy issues.
Explanation for change or no change	

Article 33 – CALCULATION FOR CROSS ZONAL CAPACITY FOR BALANCING SERVICES

Summary	36 responses received; most comments require to delete 33.1 as it links to CZC reservation (also see previous comments), what should be forbidden in NC. Others call for clearer wording in other paragraphs.
Changes made	Keep 33.1 for Balancing Capacity /Reserves; all others are relevant for energy only; integrated in restructuring of articles 31, 32.
Explanation for change or no change	It is not possible to delete paragraph 33.1, as it is necessary to state that CZC allocated/reserved for Exchange of Balancing Capacity or Sharing of Reserves needs to be available and should not get lost in other timeframes (due to UIOLI; UIOSI) and FG EB allows reservation of CZC.

Article 34 – GENERAL SETTLEMENT PRINCIPLES

Summary	36 comments were received on this article. The major themes emerging are: <ol style="list-style-type: none"> 1) A request to emphasise full cost reflectivity and the avoidance of distortions between adjacent markets. 2) Role of BRP and BSP needs to be clear, as separate entities. 3) Relevant area concept is not clear enough. 4) Make the approval procedures more transparent.
Changes made	<ol style="list-style-type: none"> 1) No change. 2) No change. 3) Change. 4) No change.
Explanation for change or no change	<ol style="list-style-type: none"> 1) The request is covered by the principles in article 47(1). 2) It is clear throughout the NC EB and in the Settlement Chapter that BRPs and BSPs are different entities. 3) Relevant Area no longer used. Imbalance Area and Imbalance Price Area introduced in the Settlement Chapter and defined in Article 2 on Definitions. 4) NRA approval is part of the Terms & Conditions approval.

Article 35 – GENERAL PRINCIPLES

Summary	<p>11 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) It's asked to entitle each NRA to give a judgment in case of disagreement between TSO and BRP about the balancing energy calculation and reconciliation. 2) Area definition: Concept of Relevant Area needs clarifications. The DT is urged to use Bidding Zone instead, corresponding to CACM. 3) Settlement Responsibility: It's asked to allow also designated entity and not only TSO to be responsible to perform imbalance settlement, accept rules for BRPs and operate a Balancing Market as it's currently in place in some member states. Delegation of some Settlement functions to another entity is described in the Article Role of TSOs, but only for Imbalance Settlement. 4) The relation of BRP to BSP: Principles of Imbalance Adjustment calculation should foresee an adequate compensation for BRPs in case of loss of value occurring because of the relation BRP-BSP. 5) The term "reconciliation" is not defined and can have different meanings in different member states. Stakeholders ask for a wording improvement: replace the term "reconciliation" with the word "settlement".
Changes made	<ol style="list-style-type: none"> 1) New definitions of Imbalance Price Area and Imbalance Area. 2) New article about delegation of functions. 3) Replace the term "reconciliation" with a proper explanation.
Explanation for change or no change	<ol style="list-style-type: none"> 1) New definitions of Imbalance Price Area and Imbalance Area will be provided to increase clarity and transparency. Both definitions will make a link with Bidding Zones without preventing other possible flexible definitions in order to respect the regional specificities of each Member State. 2) A new article about delegation of function has been introduced into the code but as far as the settlement functions are concerned, only the task of imbalance settlement is considered appropriate to be delegated under regulatory approval. 3) It has been clarified that an objective of this network code is to ensure that costs and risks for both BSPs and BRPs should be mitigated; however TSOs have not obligations to foresee any kind of compensation occurring due to the relation BSP-BRP, consequences of this relation are considered a market issue. 4) Clarifications about the meaning of the term reconciliation have been provided.

Article 36 – BALANCING ENERGY FROM FREQUENCY CONTAINMENT PROCESS

Summary	<p>6 comments were received on this article, most of them are already mentioned in the major themes identified for Chapter 5 :</p>
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	<ol style="list-style-type: none"> 1) Area definition: Concept of Relevant Area needs clarifications. The DT is urged to use Bidding Zone instead, corresponding to CACM. 2) Ambiguity about the difference between "Reserve connection TSO" and "Connecting TSO". 3) Delivered volume vs. deemed activated volume: it's asked to give the option to perform settlement of FCR basing on the energy effectively delivered rather than the deemed activated volume (subject to the effective capability of the TSOs to put in place the adequate methods of control and measurement of the energy effectively delivered following an activation). 4) Concept of "deemed activation" is unclear: DT is asked to specify what happens if the actual volumes for Frequency Containment Reserves are different from the deemed activations, and how this imbalance is rectified.
Changes made	<ol style="list-style-type: none"> 1) New definitions of Imbalance Price Area and Imbalance Area. 2) Replace "Reserve Connection TSO" with "Connecting TSO". 3) Clarify that the volume of Balancing Energy can be calculated based on requested or metered activation.
Explanation for change or no change	<ol style="list-style-type: none"> 1) New definitions of Imbalance Price Area and Imbalance Area will be provided to increase clarity and transparency. Both definitions will make a link with Bidding Zones without preventing other possible flexible definitions in order to respect the regional specificities of each Member State. 2) Term "Reserve Connection TSO" has been replaced by "Connecting TSO". 3) It has been introduced the option for each TSO to calculate the volume of balancing energy based on requested or on metered activation. 4) Deemed activation has been replaced by "activated volume of Balancing Energy for FCR".

Article 37 – BALANCING ENERGY FROM FREQUENCY RESTORATION PROCESS

Summary	<p>11 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) Area definition: Concept of Relevant Area needs clarifications. The DT is urged to use Bidding Zone instead, corresponding to CACM. 2) Settlement Responsibility: It's asked to allow also designated entity and not only TSO to be responsible to perform imbalance settlement, accept rules for BRPs and operate a Balancing Market as it's currently in place in some member states. The delegation of some Imbalance Settlement to another entity is described in the Article Role of TSOs, but only for Imbalance Settlement. 3) Metered volume vs. requested activation: It's asked to settle Balancing energy from FRR basing on the actual metered volume, rather than the requested activation. Alternatively it's asked to use the minimum between requested and metered volume."
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Changes made	<ol style="list-style-type: none"> 1) New definitions of Imbalance Price Area and Imbalance Area. 2) New article about delegation of functions. 3) Clarify that the volume of Balancing Energy can be calculated based on requested or metered activation.
Explanation for change or no change	<ol style="list-style-type: none"> 1) New definitions of Imbalance Price Area and Imbalance Area will be provided to increase clarity and transparency. Both definitions will make a link with Bidding Zones without preventing other possible flexible definitions in order to respect the regional specificities of each Member State. 2) A new article about delegation of function has been introduced into the code but as far as the settlement functions are concerned, only the task of imbalance settlement is considered appropriate to be delegated under regulatory approval. 3) It has been introduced the option for each TSO to calculate the volume of balancing energy based on requested or on metered activation.

Article 38 – BALANCING ENERGY FROM RESERVE REPLACEMENT PROCESS

Summary	<p>11 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) Concept of Relevant Area needs clarifications. The DT is urged to use Bidding Zone instead, corresponding to CACM. 2) Ambiguity about the difference between "Reserve connection TSO" and "Connecting TSO". 3) Settlement Responsibility: It's asked to allow also designated entity and not only TSO to be responsible to perform imbalance settlement, accept rules for BRPs and operate Balancing Market as it's currently in place in some member states. The delegation of some Imbalance Settlement to another entity is described in the Article Role of TSOs, but only for Imbalance Settlement. 4) Metered volume vs. requested activation: It's asked to settle Balancing Energy from FRR basing on the actual metered volume, rather than the requested activation. Alternatively it's asked to use the minimum between requested and metered volume.
Changes made	<ol style="list-style-type: none"> 1) New definitions of Imbalance Price Area and Imbalance Area. 2) Replace "Reserve Connection TSO" with "Connecting TSO". 3) New article about delegation of functions. 4) Clarify that the volume of Balancing Energy can be calculated based on requested or metered activation.
Explanation for change or no change	<ol style="list-style-type: none"> 1) New definitions of Imbalance Price Area and Imbalance Area will be provided to increase clarity and transparency. Both definitions will make a link with Bidding Zones without preventing other possible flexible definitions in order to respect the regional specificities of each Member State. 2) Term "Reserve Connection TSO" has been replaced by "Connecting TSO".

	<ol style="list-style-type: none"> 3) A new article about delegation of function has been introduced into the code but as far as the settlement functions are concerned, only the task of imbalance settlement is considered appropriate to be delegated, under regulatory approval. 4) It has been introduced the option for each TSO to calculate the volume of balancing energy based on requested or on metered activation.
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Article 39 – IMBALANCE ADJUSTMENT TO BALANCE RESPONSIBLE PARTY

Summary	<p>11 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) It's asked to identify a neutral party that shall control the balancing energy activation of each BSP; this control should be based on the data used by TSO for the imbalance calculation. It's necessary since BSPs are not financially responsible for the imbalances. 2) Metered volume vs. requested activation: Need to clarify that the net Balancing Energy is a volume of energy calculated as the algebraic sum of Balancing Reserves volumes actually metered. 3) It's asked to clarify how the Imbalance Adjustment is divided among the BRPs of the Relevant Area. 4) Concept of Relevant Area needs clarifications. The DT is urged to use Bidding Zone instead, corresponding to CACM. 5) It's asked to allow Designated Entity and not only TSO to be responsible to perform imbalance settlement, accept rules for BRPs and operate Balancing Market as it's currently in place in some member states. The delegation of some Imbalance Settlement to another entity is described in the Article Role of TSOs, but only for Imbalance Settlement.
Changes made	<ol style="list-style-type: none"> 1) Clarify that the volume of Balancing Energy can be calculated based on requested or metered activation. 2) New definitions of Imbalance Price Area and Imbalance Area. 3) New article about delegation of functions.
Explanation for change or no change	<ol style="list-style-type: none"> 1) It has been clarified that an objective of this network code is to ensure that costs and risks for both BSPs and BRPs should be mitigated and that a TSO shall define consequences in case of non-compliance of BSPs and BRPs with the terms and conditions. However a neutral party charged to control the balancing activation of each BSP is considered inappropriate, the consequences of the relation are considered a market issue. 2) It has been introduced the option for each TSO to calculate the volume of balancing energy based on requested or on metered activation. 3) It has been specified that Terms and Conditions related to balancing shall include modalities to identify the BRPs supporting the Imbalance Adjustment per Balancing Service product. 4) New definitions of Imbalance Price Area and Imbalance Area will be provided to increase clarity and transparency. Both definitions will make a link with Bidding Zones without preventing other possible flexible

	<p>definitions in order to respect the regional specificities of each Member State.</p> <p>5) A new article about delegation of function has been introduced into the code but as far as the settlement functions are concerned, only the task of imbalance settlement is considered appropriate to be delegated under regulatory approval.</p>
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Article 40 – GENERAL PRINCIPLES

Summary	<p>33 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) The Relevant Area is not well understood. The DT is urged to use Bidding Zone instead, corresponding to CACM. 2) Some respondents propose that the development of common rules for TSO-TSO settlement in the various paragraphs should be subject to NRA approval and potentially also Public Consultation. 3) The ramping rate could be sufficient for exchange of energy and hence it is not necessary to have an option for using a ramping period. Some respondents find that the ramp rate process should be part of the product definition. Furthermore, some respondents request that no variable ramping rate can be implemented. 4) Respondents request a clearer definition of Unintentional Deviations. 5) Improve wording of 40.5.b.
Changes made	<ol style="list-style-type: none"> 1) Change. Relevant area is removed and well known area definitions already used in other codes are introduced. 2) Change. NRA approval now included in Article 7.4. 3) Change. Only the term Ramping Period is used. 4) Change. Unintentional Deviation Energy is no longer used. 5) Change. Article redrafted.
Explanation for change or no change	<ol style="list-style-type: none"> 1) A common area definition acceptable to TSO with a more nodal approach to Imbalance Calculation and Settlement has been found. 2) Should be changed in line with ACER comment 183 to require NRA approval. NRAs could, as part of the approval process, include a Public Consultation, but this should not a TSO requirement. 3) - 4) Changed to unintended exchange of energy. Further explanation can be found in for article 54 in the supporting document. 5) Article redrafted.

Article 41 – INTENDED EXCHANGE OF ENERGY THROUGH IMBALANCE NETTING PROCESS

Summary	<p>11 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) Imbalance Netting Process: Wrong reference to article 58 in 41.1 and no definition in article 2.
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	2) Respondent requests a clarification on "value of avoided activation of Balancing Energy".
Changes made	1) No change. 2) No change.
Explanation for change or no change	1) Definition of Imbalance Netting Process is included in NC LFCR and should therefore not be defined in NC EB. 2) Value of avoided activation has not been defined yet. DA price is not useful, since it is a reflection of yesterday's expectations and conditions could have changed - use of DA price could thus create perverse incentives. No single optimum solution exists. Important to avoid reference to other markets.

Article 42 – INTENDED EXCHANGE OF ENERGY THROUGH FREQUENCY RESTORATION ACTIVATION PROCESS

Summary	1 comment was received on this article requesting a definition of the "Frequency Activation Restoration Process".
Changes made	Change.
Explanation for change or no change	The use of the definition will be removed from the NC EB.

Article 43 – INTENDED EXCHANGE OF ENERGY THROUGH RESERVE REPLACEMENT ACTIVATION PROCESS

Summary	1 comment was received on this article requesting a definition of the "Reserves Replacement Activation Process"
Changes made	Change.
Explanation for change or no change	The use of the definition will be removed from the NC EB.

Article 44 – INTENDED EXCHANGE OF ENERGY THROUGH AGREED RAMPING PERIOD OR AGREED RAMP RATE PROCESS

Summary	2 comments were received on this article asking that the methodology to calculate the volume and the price of the intentionally exchanged energy should be subject to NRA approval and potentially also Public Consultation.
Changes made	Partly change.
Explanation for change or no change	NRA approval of settlement rules for intended exchange of energy is included in article 53.

Article 45 – UNINTENDED EXCHANGE OF ENERGY THROUGH UNINTENTIONAL DEVIATIONS

Summary	6 comments were received on this article. The two themes emerging are: <ol style="list-style-type: none"> 1) Unintentional Deviation (Energy) should be (more clearly) defined in article 2 2) The pricing method of Unintentional Deviation Energy should be subject to NRA approval
Changes made	<ol style="list-style-type: none"> 1) Change. Unintentional Deviation Energy is no longer used 2) Change. NRA approval included in article 7(4)
Explanation for change or no change	<ol style="list-style-type: none"> 1) Changed to unintended exchange of energy. Further explanation can be found for article 54 in the supporting document 2) TSO-TSO settlement rules shall be approved by NRAs

Article 46 – SETTLEMENT AND INVOICING

Summary	1 comment was received on this article proposing to add to 46.1 a reference to the settlement rules of Chapter 5
Changes made	Not relevant after the restructuring of the chapter.
Explanation for change or no change	A general reference to settlement rules of chapter 5 is no longer needed.

Article 47 – GENERAL PRINCIPLES

Summary	13 comments were received on this article. The major themes emerging are: <ol style="list-style-type: none"> 1) Risk of lack of harmonisation in the Imbalance settlement mechanisms 2) Should also apply to other designated entities 3) Include consultation and NRA approval
Changes made	<ol style="list-style-type: none"> 1) Change. 2) Change. Included in Article 9 on Delegation of Functions 3) No change
Explanation for change or no change	<ol style="list-style-type: none"> 1) Restructuration of article 47, principles are already included in article settlement principles and process of harmonisation for imbalance settlement mechanisms to be included in separate articles "TARGETS" 2) TSOs are allowed to delegate functions to other entities 3) No consultation required in FG EB.

Article 48 – IMBALANCE SETTLEMENT PERIOD

Summary	32 comments were received on this article. The major themes emerging are:
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	<ol style="list-style-type: none"> 1) The CBA for harmonisation of the ISP should be sent at the latest 2 years after entry into force, not 3 years after entry into force, because 3y after Entry into Force the main features of Imbalance Settlement should be harmonised) 2) CBA for harmonisation: To take into consideration: Practicality and costs for BRPs and BSPs, functioning of the retail market and synergies with ID market 3) Include that ISP should be ≤ 30 min (following FG) 4) Consult in case of deviation from CBA decision
Changes made	<ol style="list-style-type: none"> 1) Change 2) No change 3) Change 4) Change
Explanation for change or no change	<ol style="list-style-type: none"> 1) The CBA shall be submitted at the latest 2 years after EIF but could be submitted earlier. 2) No reference to hypothesis to be taken into account in the CBA for harmonisation: it will be tackled in the methodology. Not under the scope of settlement. 3) Limit of 30 minutes included in the article as it is required by the FG 4) ISP is part of the terms and conditions so any change on the ISP should be consulted on.

Article 49 – IMBALANCE CALCULATION

Summary	<p>46 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) Respondents highlights that not only TSOs are responsible for imbalance tasks and that 49.1-3 should also refer to other Designated Entities 2) Proposal to change Relevant Area to Bidding Zone.
Changes made	<ol style="list-style-type: none"> 1) Change. The new article 9 on Delegation of Functions covers this 2) Change. New definition introduced.
Explanation for change or no change	<ol style="list-style-type: none"> 1) In the updated NC EB TSOs are allowed to delegate functions according to article 9 2) Addressed in the general comments to Chapter 5

Article 50 – IMBALANCE PRICING

Summary	<p>65 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) Marginal Pricing. Some stakeholders want to enforce a single price system. Some stakeholders want to enforce a dual price system with reference to a day ahead price 2) lack of harmonisation
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	<ul style="list-style-type: none"> 3) clarify value of avoided activation 4) Should also refer to other designated entities
Changes made	<ul style="list-style-type: none"> 1) No change 2) No change, however wording has been improved to increase clarity. 3) No change 4) Change. Included in Article 9 on Delegation of Functions
Explanation for change or no change	<ul style="list-style-type: none"> 1) The NC EB will not set out prescribe the use of either single price or dual price systems. 2) Wording improved. 3) Value of avoided activation has not been defined yet. DA price is not useful, since it is a reflection of yesterday's expectations and conditions could have changed - use of DA price could thus create perverse incentives. No single optimum solution exists. Important to avoid reference to other markets. 4) TSOs are allowed to delegate functions to other entities

Article 51 – GENERAL PRINCIPLES

Summary	11 comments were received on this article requesting a definition and clarification of a common set of settlement rules
Changes made	Change
Explanation for change or no change	The chapter and article have been redrafted to clarify settlement rules that shall be established pursuant to article 11, 32 and 59

Article 52 – SETTLEMENT WITH BALANCING SERVICE PROVIDERS FOR PROVIDING BALANCING RESERVE PRODUCTS

Summary	12 comments were received on this article. The major theme emerging is that Standard Products should be procured based on a common method (market-based)
Changes made	Change
Explanation for change or no change	Following the new Article 30 procurement of Balancing Capacity shall be done based on a market-based method.

Article 53 – SETTLEMENT BETWEEN TSOs DUE TO THE EXCHANGE AND SHARING OF RESERVES

Summary	1 comment was received on this article requesting that TSOs shall consult stakeholders when defining the rules for the settlement
Changes made	Change
Explanation for change or no change	Stakeholders will be consulted on the Terms and Conditions related to Balancing following article 6. This includes settlement rules.

Article 54 – GENERAL PRINCIPLES

Summary	5 comments were received on this article requesting a transparent consultation regarding rules for imbalance price and determination of allocated volumes
Changes made	Change
Explanation for change or no change	Stakeholders will be consulted on the Terms and Conditions related to Balancing following article 6. This includes settlement rules.

Article 55 – ALGORITHM DEVELOPMENT

Summary	31 comments received, dominated by comments with same wording, it should be optional to develop an algorithm, it should be developed just one algorithm
Changes made	No changes
Explanation for change or no change	It is not possible to make the optimisations without describing how to do this in algorithms. The algorithms can be short or long.

Article 56 – ALGORITHM AMENDMENT

Summary	31 comments were received on this article, dominated by comments with same wording: <ol style="list-style-type: none"> 1) It should be optional to develop algorithm, 2) it should be just one algorithm 3) description of secondary markets is not necessary 4) consultation is necessary
Changes made	No changes. Description of algorithm will be included in T&C, with requirement to publish and NRA approval
Explanation for change or no change	<ol style="list-style-type: none"> 2) One algorithm solving all optimisations probably will be very complex, and normally not the optimal solution. 3) Change in text - remove secondary market. However, according to FG it is obligatory to allow BSPs to transfer obligations, so rest of text stays 4) Reasonable to include in T&C

Article 57 – ANNUAL REPORT

Summary	31 comments were received. The major themes emerging: <ol style="list-style-type: none"> 1) reservation of cross-border capacity should not be allowed, (and consequently not reported) 2) each year TSOs should prepare detailed report (no simplified version every 2 year) 3) Shorter deadlines for preparing Annual report and indicators list
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	<ol style="list-style-type: none"> 4) Performance indicators shall be defined by ACER and not by TSOs and publically consulted. What should be indicator used for: “performance of the Balancing Network Code in practice, or the performance of the TSOs in implementing and upholding the code” 5) new aims of report (assess the impact of the implementation of this Network Code on the day ahead and intraday markets) 6) Proposals of reorganisation of aims and indicators 7) Public Consultations of performance indicators and changes in report structure and content 8) Some proposals of new indicators and aims
Changes made	<p>Shortening publication time to 6 months</p> <p>Reorganisation of Annual Report's aims and indicators to make article more clear</p>
Explanation for change or no change	<ol style="list-style-type: none"> 1) No change: Possibility of capacity reservation has been kept in Chapter 4. 2) No change: Preparing detailed report each year seems to be unnecessary overburden and will use resources which should be engaged in Balancing Market implementation. Updating indicators and showing progress which has been made during last year shall give detailed enough picture of Balancing Market integration stage. 3) Change: The 6 months term seems to be sufficient for preparing reliable and valuable report. Further shortening of publication time will not allow for the development of a reliable report 4) No Change: According to ACER Framework Guidelines performance indicators have to be defined by TSOs. 5) No change: assessment of the impact of the implementation of this Network Code on the day ahead and intraday markets is included in the aim “analyse possible inefficiencies and distortions in terms of competition and market fragmentation, facilitation of Demand Side Response and participation of renewable energy sources, integration of Balancing Markets and side-effects on other electricity markets.” 6) Change: The list of Annual Report's aims and indicators were reorganized to obtain more clear text. 7) No change: According to ACER Framework Guidelines performance indicators have to be defined by TSOs, additional process of Public Consultations will delay whole reporting process. 8) No change: proposed aims/indicators were included in other ones

Article 58 – TARGETS

Summary	<p>27 comments were received on this article. The following findings represent majority of comments however are not exhaustive:</p> <ol style="list-style-type: none"> 1) CoBAs should merge in order to reach the regional and the European integration model. 2) CMOL based on TSO-TSO model should be the starting point for developing the European integration model.
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	<ol style="list-style-type: none"> 3) Improve wording and clarity on the process how TSOs can modify the integration target models. 4) Deletion of targets for imbalance settlement.
Changes made	Changes partly accepted
Explanation for change or no change	All changes included in the new articles 12-16 on Targets, however target on Imbalance Settlement is kept.

Article 59 – COST-BENEFIT ANALYSIS

Summary	<p>50 comments were received on this article. The major themes emerging:</p> <ol style="list-style-type: none"> 1) Either (a) stakeholders should be consulted throughout on the CBA, plus use best endeavours to produce a robust CBA. Or (b) delete the paragraph 1 altogether. 2) Stakeholders should be consulted, secondly reservation should not be allowed, and finally TSOs should be able to countertrade capacity after ID gate closure and not reserve before this 3) ACER should ensure harmonisation, of which the cost-benefit analyses are a key component.
Changes made	<ol style="list-style-type: none"> 1) Change 2) Partly change 3) Change
Explanation for change or no change	<ol style="list-style-type: none"> 1) The article has been divided into separate articles per target (RR, mFRR, aFRR, imbalance netting, imbalance settlement) and included in a separate section at the beginning of the NC. Each article describes at what stage how many CoBAs is allowed. 2) TSO-TSO model is specifically named as a prerequisite for regional and European integration model for RR, mFRR, aFRR, imbalance netting. 3) Wording improved. Target models are those already required by FG EB. TSOs have possibility to modify those targets by submitting a CBA. Furthermore, TSOs have an obligation to provide a CBA for configuration of CoBA(s) for the European integration model.

Article 60 – TRANSITION PERIOD

Summary	4 comments were received on this article asking that reporting should take place as soon as code enters into force, not subject to transition period
Changes made	Change
Explanation for change or no change	The requirement on Reporting is not subject to the transition period.

Article 61 – DEROGATIONS

Summary	79 comments were received on this article, major themes emerging were: <ol style="list-style-type: none"> 1) Most respondents wanted to remove the possibility of TSOs requesting derogations as the code should apply equally to all TSOs in law, or wanted to see only the European Commission responsible for granting such derogations. 2) Market operators should also be allowed to apply for derogations 3) No repeated derogations 4) Please delete the possibility for anyone applying for a derogation
Changes made	<ol style="list-style-type: none"> 1) No change 2) No change 3) Change 4) No change
Explanation for change or no change	<ol style="list-style-type: none"> 1) NRAs shall review derogation requests and shall notify ACER and the European Commission of any derogations given 2) TSOs can ask for derogations on tasks delegated to other entities. 3) According to 66(5) derogations shall be granted only once and for a maximum period of two years. 4) The option to apply for derogations is deemed necessary.

Article 62 – ENTRY INTO FORCE

Summary	No comments received
Changes made	-
Explanation for change or no change	-