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**SUPPORTING DOCUMENT FOR THE
NETWORK CODE ON
ELECTRICITY BALANCING**

21 OCT 2013

FOR V1.30 OF THE NC EB

**A WORKING DOCUMENT,
WHICH IS SUBJECT TO AMENDMENTS,
WHICH SUPPORTS THE ASSESSMENT OF THE DRAFT
NETWORK CODE ON ELECTRICITY BALANCING.**

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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 consultation of 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 comitology, 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:

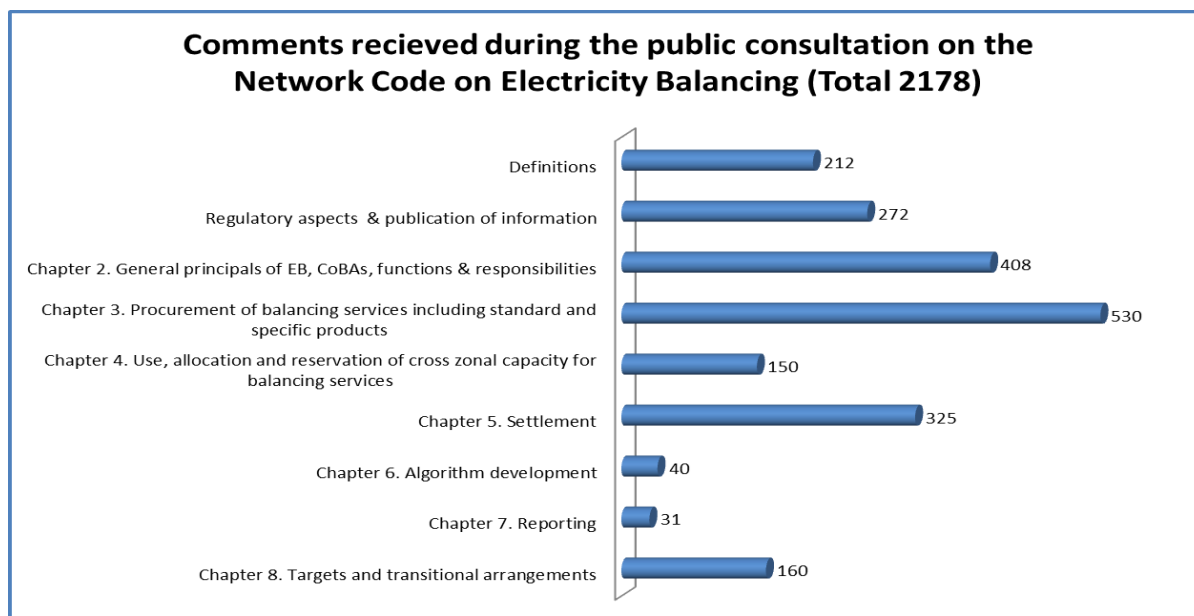
- Section 1** Purpose and Objectives.
- Section 2** Procedural Aspects – introduces the legal framework within which the market-related Network Codes have been developed, as well as the next steps in the process.
- Section 3** Added value of the NC EB – describes how the NC EB adds value to the harmonised, 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 Network Code, 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:



The overview of outcome of the public consultation can be found in Chapter 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 1.

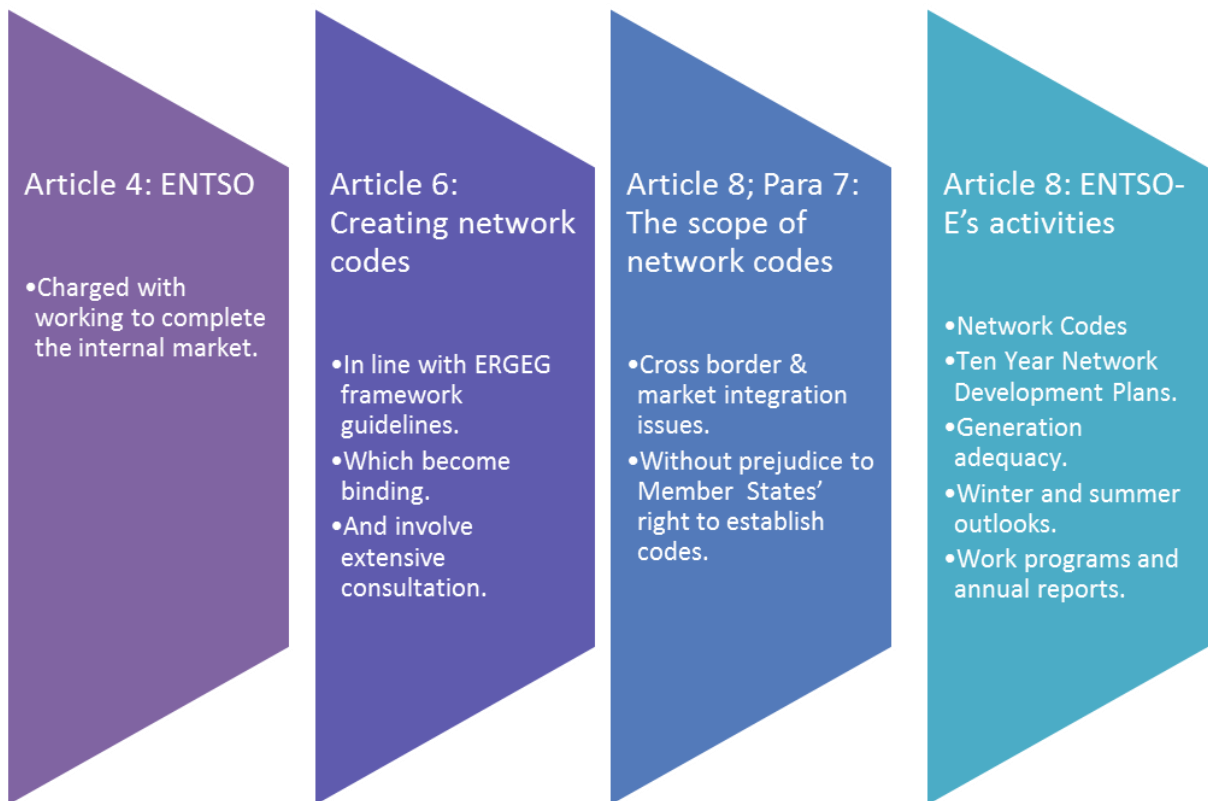
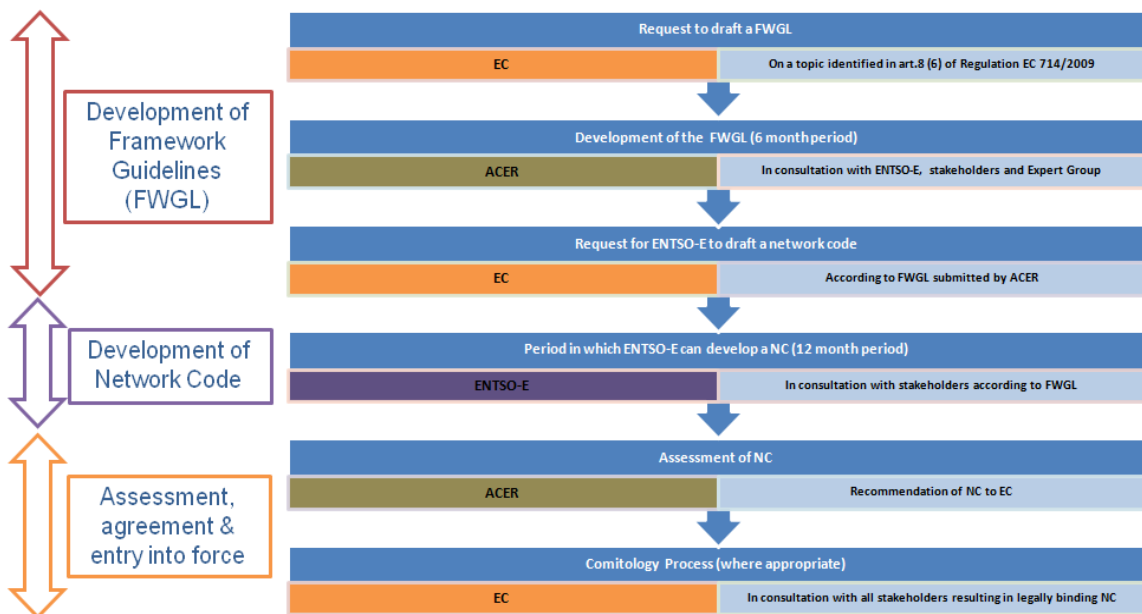


Figure 1: ENTOSO-E's legal role in Network Code development according to Regulation (EC) 714/2009.

Moreover, Regulation (EC) 714/2009 creates a process for developing Network Codes involving ACER, ENTOSO-E and the European Commission, as shown in Figure 2below.



.....through a collaborative process

Figure 2: 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 code to ACER is 1 January 2014.

2.3 NEXT STEPS IN THE PROCESS

Following agreement and approval within ENTSO-E, the Network Code 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 and Forward Capacity Allocation, 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, at least on regional level, within six years of the NC EB coming into force.

In addition to the measures set out in the FG EB, the NC EB also handles and describes coordinated procurement activities for Frequency Containment Reserve as well as coordinated activities related to the reservation and the procurement of Balancing Capacity. This comprehensive and ambitious approach allows even more potential benefits related to all aspects of Balancing to be realised.

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 is introduced in the Network Code 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, target model for Automatic FRR). 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 Coordinated Balancing Area 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 Network Code 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 LFC 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 “Balancing Reserve”. 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. The TSOs usually check and/or conclude contracts to guarantee they have access to these Balancing Capacity ahead of real-time.

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 3:

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

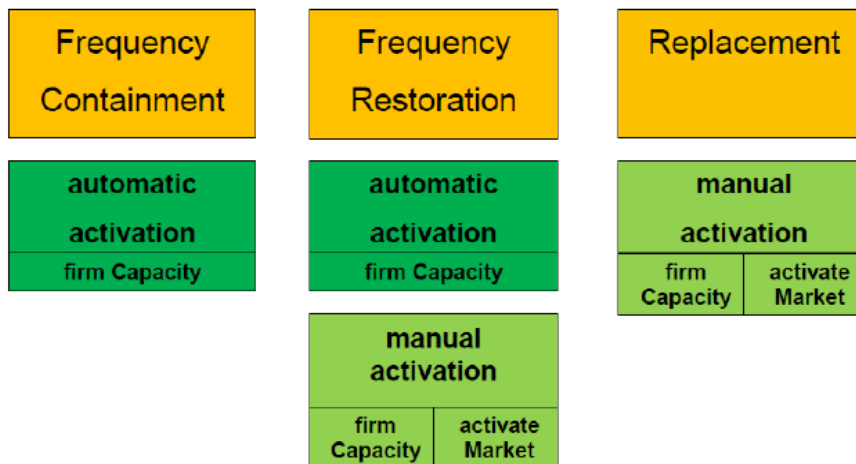


Figure 3: Three Types of Reserve and Sourcing

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 Balancing Energy and Balancing Reserve products 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 Reservation and Use of Cross Zonal Capacity (Chapter 4 NC EB)

To ensure the availability of Balancing Services procured outside the domestic LFC Area, TSOs require the ability to reserve capacity on Interconnectors. Cross Zonal Capacities are 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 marginal or double marginal pricing mechanism.

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. As consequence BRPs might tend to balance themselves out over the uncongested area and not per LFC Area. A pay-as-cleared price will reflect the highest activation price for the uncongested area and not for the LFC Area; as a consequence the Imbalance Prices of LFC Area does not necessary reflect the Imbalance situation of the LFC 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 LFC Area is correctly delivered by the BSP. There will be various Coordinated Balancing Areas, 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 Coordinated Balancing Areas.

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 FG EB of six years after entry into force as the timescales for implementation. 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 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 illustrates.

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 capacities 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.

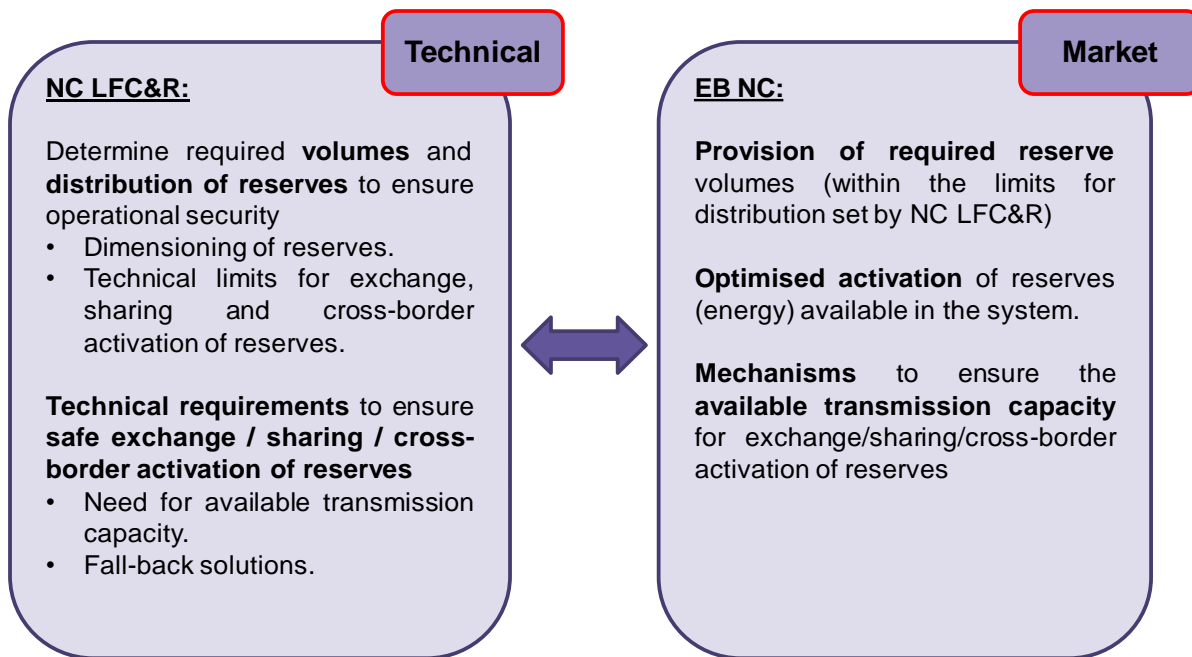


Figure 4: NC LFCR and NC EB Interaction

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 Capacities 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.

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 exchanging 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. 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. ADDITIONAL INFORMATION REQUIRED FROM SECRETARIAT ON CALIBRA TOOL?

4.7.2 Coordinated Balancing Area

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

The Coordinated Balancing Area 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 Coordinated Balancing Area and between neighbouring Coordinated Balancing Areas will increase; neighbouring Coordinated Balancing Areas will merge; and finally all Coordinated Balancing Areas 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 Coordinated Balancing Area from the beginning, Exchange and Sharing of Balancing Capacity are not mandatory but an option. Coordinated Balancing Areas for Balancing Capacity can be smaller than those for Balancing Energy (if established).

More detailed information on Coordinated Balancing Area is contained in Article 11 – Coordinated Balancing Area.

4.7.3 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 Network Code. As the mid-term and long-term targets have been established and the requirement to establish Coordinated Balancing Areas which include many more than the initial minimum two TSO areas, this requirement leads TSOs to evaluate a potential efficiency to be gained from cooperation in a longer run, and hence create an incentive that TSOs strive for the establishment of larger Coordinated Balancing Areas to those established already at the outset of the Network Code, 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 Coordinated Balancing Area 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 Coordinated Balancing Area also create further incentives.

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

In the event that TSOs are active in different Coordinated Balancing Areas (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 Coordinated Balancing Areas.

The requirement that functions have to be established within a Coordinated Balancing Area 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 Coordinated Balancing Area.

In parallel with the implementation of the NC EB is the work which is underway among various TSOs in establishing and managing pilot projects 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 the reduction in costs including the cost 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 Coordinated Balancing Area are:

- (a) Definitions for each Balancing Energy Standard Product are consistent;
- (b) Procurement is based on Balancing Reserve Bids which have already been accepted and allocated for activation uniquely by the TSO who accepted them, and on additional Balancing Energy Bids made available by non-Balancing Reserve Balancing Energy providers;
- (c) Pricing methods for the Common Merit Order List are harmonised;
- (d) Cross border balancing gate closure times are compatible;
- (e) Balancing Energy Bids must have a cross border capacity allocation which is either available after Intraday or reserved previously in accordance with Chapter 4 of NC EB; and
- (f) 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 Coordinated Balancing Area 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, variable and smaller generation units). These Balancing Energy Bids can be updated until gate closure time. After cross border Intraday Gate Closure Time and before cross border balancing gate closure time the BSPs can continue to change their Balancing Energy Bids which were previously submitted or submit new bids. After the cross border balancing gate closure time their Balancing Energy Bids are firm. 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.

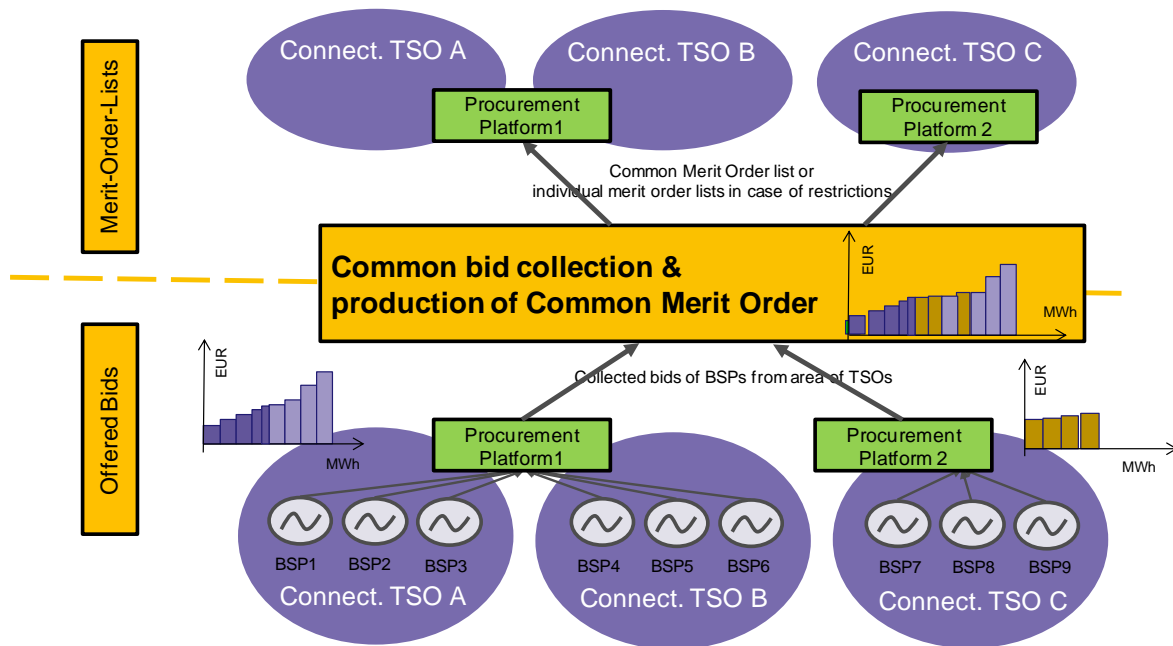


Figure 5: Procurement of Balancing Energy with Common Merit Order List – Example of Coordinated Balancing Area with three TSOs

In Figure 5 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 minimum cost of activation of the incoming balancing request while respecting some capacity and operational restrictions. The Activation Optimisation Function is responsible for using the Activation Optimisation Algorithm which itself is 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 cross border balancing gate closure time, the Activation Optimisation Function calculates the most efficient activation taking the following into account:
 - (a) Common Merit Order List containing all 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 (Connection 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.

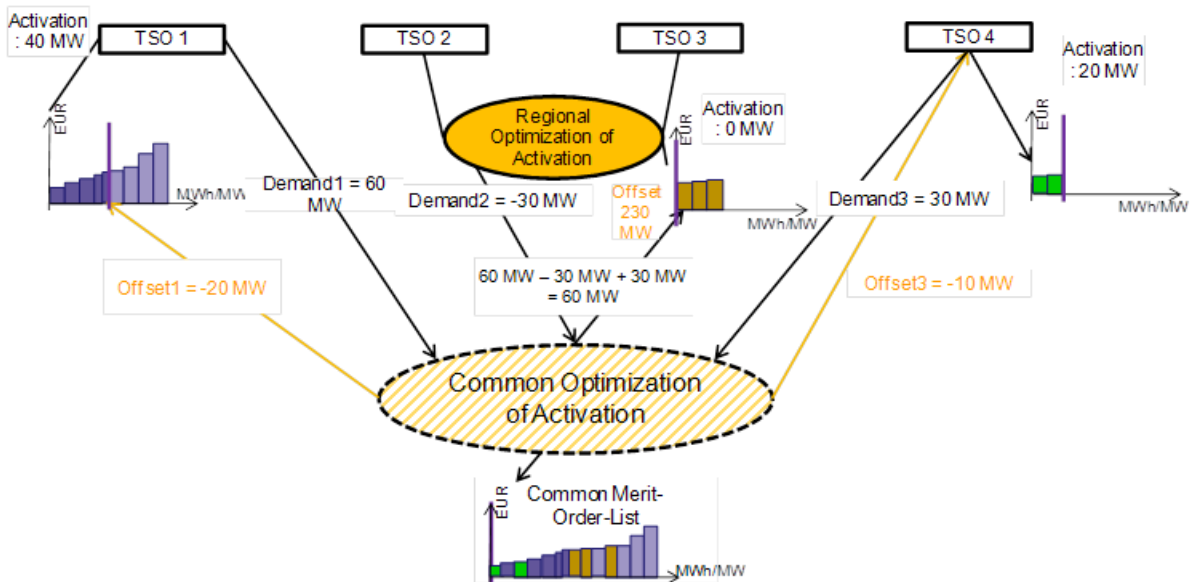


Figure 6: Example of the Activation Model

In the above Figure 6, 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 Provision of Capacity based on Reservation or Allocation

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 provision of Cross Zonal Capacity for Balancing purposes in earlier timeframes through either the Probabilistic Approach, allocation through a market-base Co-optimisation Process or reservation of capacity. The TSOs do not get exclusive access to Cross Zonal Capacity for exchange or sharing of Balancing Services without providing the Cross Zonal Capacity. The NC EB establishes three approaches for the provision of Cross Zonal Capacity.

The following example illustrates the processes for the provision of Cross Zonal Capacity considering the approaches of reservation and allocation rather than the third probabilistic approach. These processes are covered within Chapter 4 of the NC EB.

Scenario description

TSO A and TSO B are connected with a 2,000 MW Interconnector. The Interconnector is often congested and therefore the ‘Probabilistic Approach’ for the provision of Cross Zonal Capacity is not an option. Both TSOs procure Balancing Reserve products in national weekly auctions. TSO A and TSO B agree on providing Cross Zonal Capacity to Balancing on a weekly basis before the day ahead market (DAM) to enable:

- a) Exchange of Balancing Capacity products and/or
- b) Sharing of Balancing Capacity products.

The Exchange of Balancing Capacity changes the geographical distribution of Balancing Capacity without changing the combined total of Balancing Capacity required in the systems as set by the reserve dimensioning process. In contrast the sharing of Balancing Capacity allows the TSO A of Area A and the TSO B of 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.

If no weekly auction of Cross Zonal Capacity is in place, Cross Zonal Capacity is obtained using the reservation approach (covered in Article 29). If an auction of Cross Zonal Capacity is already in place, the TSOs can choose to use the allocation approach instead. This example just covers up-regulation reserve.

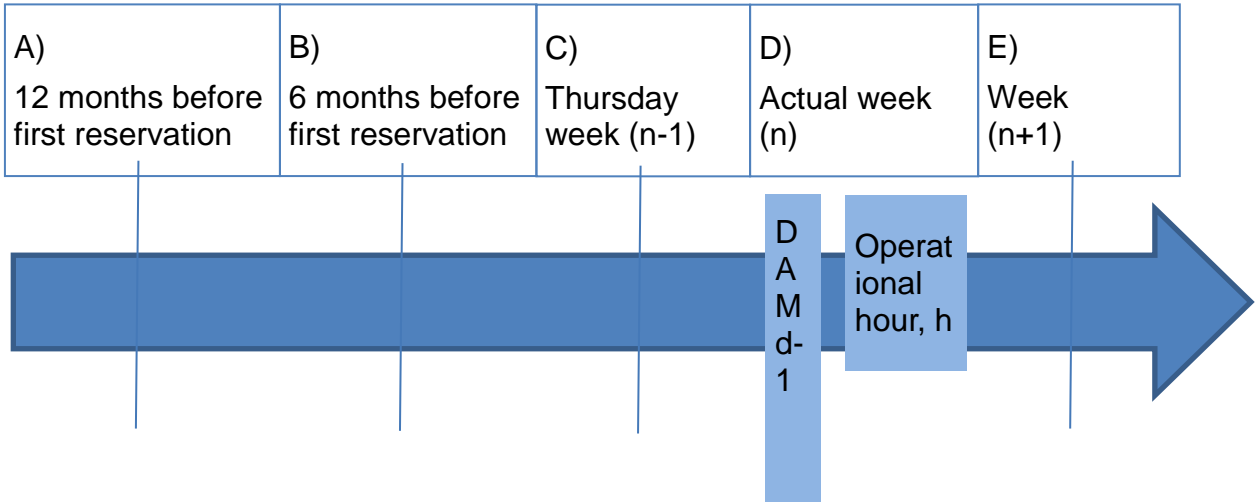


Figure 7: Example of the Activation Model

Process description

A) Establish methodology

No later than twelve months before the first period of exchange and/or sharing between TSO A and TSO B, a market consultation needs to be arranged for submission to the relevant NRAs, which includes:

- a) The maximum volume that can be exchanged within the period it is applied for (e.g. 50 MW)
- b) A description of the provision methodology. The NC EB allows for several provision methodologies. This example includes two methodologies:
 - i. Allocation of Cross Zonal Capacity
 - ii. Reservation of Cross Zonal Capacity by nomination of preliminary reserved Cross Zonal Capacity.

This methodology must include a socioeconomic (Cost-Benefit) Analysis. This example of the specific allocation and reservation will be based on a simplified socioeconomic analysis in a market based process.

B) NRA approval

No later than six months after receiving the application the relevant NRAs have to reach a decision on the application. When the Reservation of Cross Zonal Capacity is applied by nomination of preliminary reserved Cross Zonal Capacity, the NRAs shall approve both the Nomination methodology and the volume of preliminary reserved Cross Zonal Capacity.

C) Provision of transmission capacity - process

As an example, on a Thursday/Friday during week n-1, TSO A and TSO B procure reserves for the following week (n). They then

- a) Bid in the transmission capacity auction, or
- b) Nominate volume of transmission capacity that shall be reserved for the Exchange of Balancing Capacity. Figure 8 below illustrates the flow of information in this process:

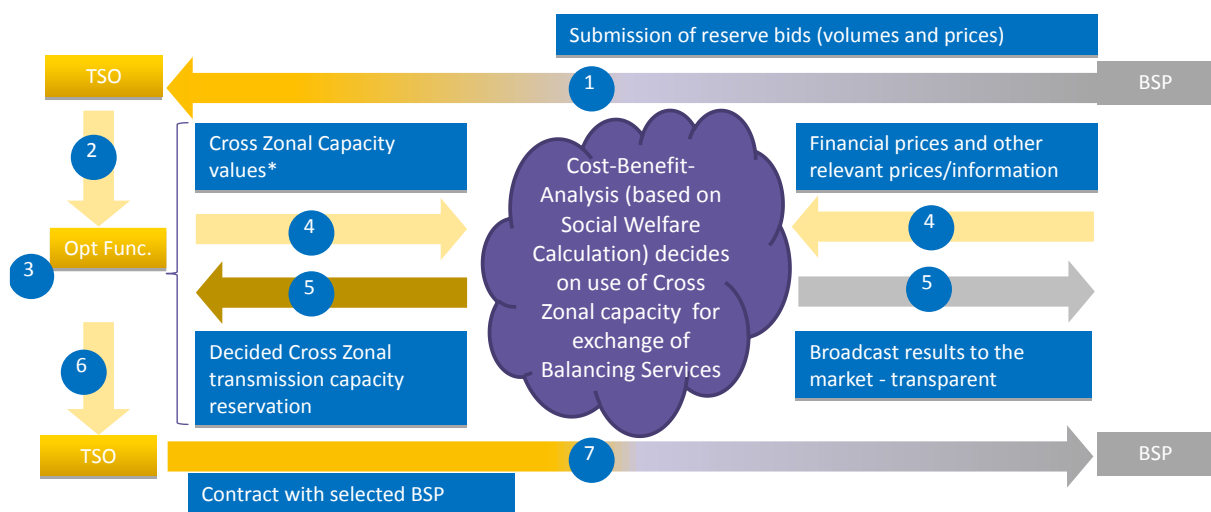


Figure 8: Detailed description of process of nomination of Cross Zonal Capacity for specific week; Example of the Activation Model

Description of the detailed steps in Figure 8 above:

1	National TSOs collect reserve bids from national BSPs	
2	TSOs submit bids and local reserve needs to common platform	
3	Reserve Procurement Optimisation Function calculate cross border capacity value (willingness to pay based on spread between reserve bids)	
4	Left arrow: submit value of use of transmission capacity for Exchange of Balancing Capacity from Optimisation function to Cost-Benefit Analysis	Right arrow: collect prices and other indicators of price differences in "ordinary" energy market (must be public prices / transparent data)
Run the algorithm		
5	Left arrow: Results of algorithm back to Activation Optimisation Function, how many MW Cross Zonal Capacity will be reserved for Exchange of Balancing Services by nominating preliminary reserved capacity	Right arrow: Broadcast Cross Zonal Capacity reservation results to market
6	Transfer of "clearing results" of Balancing Reserve Bids to national TSOs.	
7	Contract between TSO and BSP for Exchange of Balancing Capacity (where connecting TSO contracts exchanged volumes nationally in addition to national obligation. Receiving TSO contracts nationally with TSOs less than national obligation)	

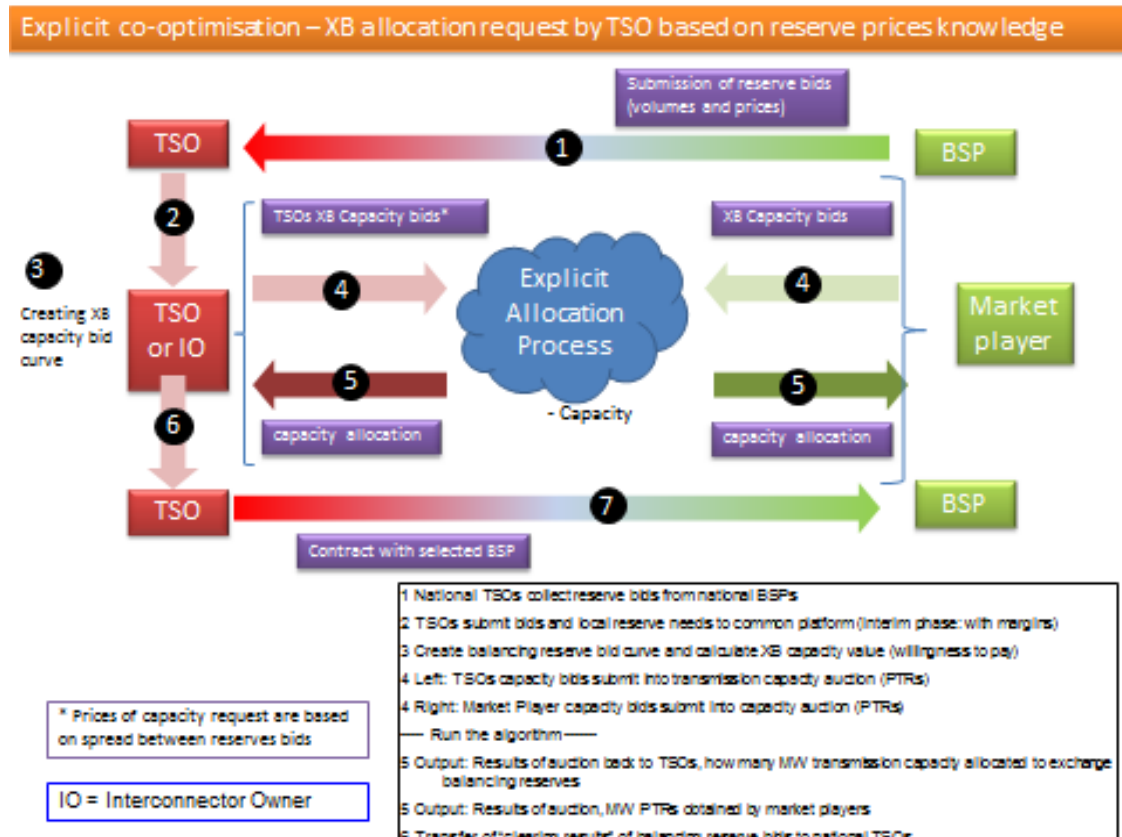


Figure 9: A detailed description of process of Allocation of Cross Zonal Capacity for specific week

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 the 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 have 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 TSO which correspond with self-schedules of their units. Bids are used by 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 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 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 10 illustrates Balancing 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.

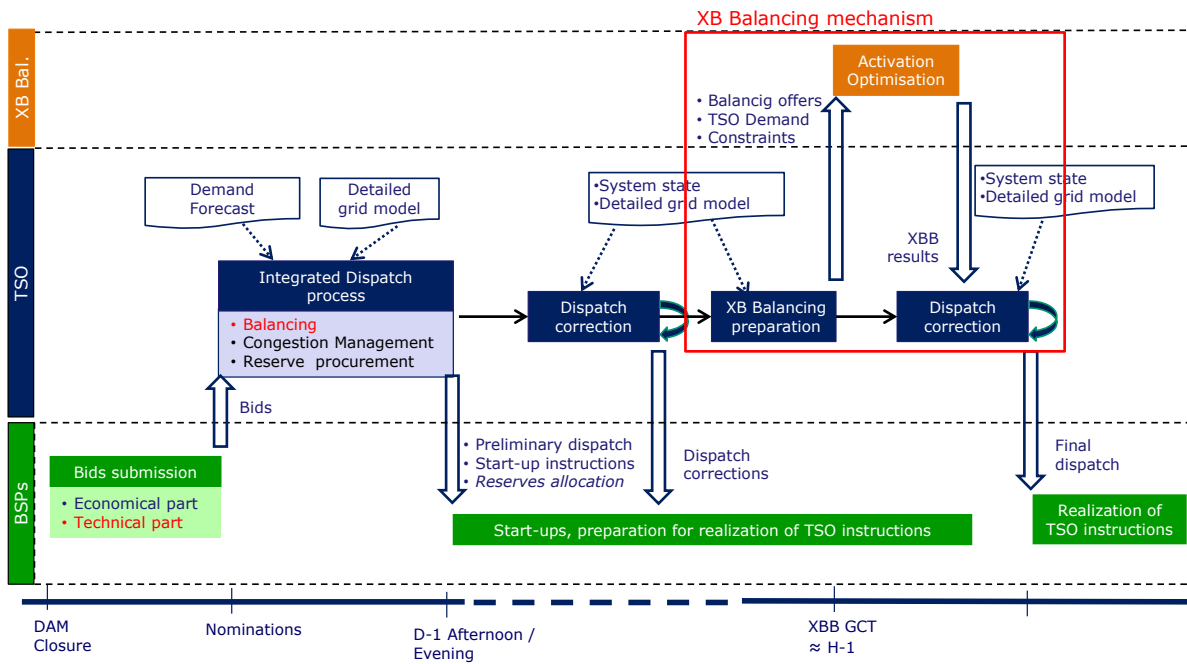


Figure 10: Balancing in a Central Dispatch System

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 whereby only the availability of a generating unit can be updated. 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.

4.8 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 11 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/>).

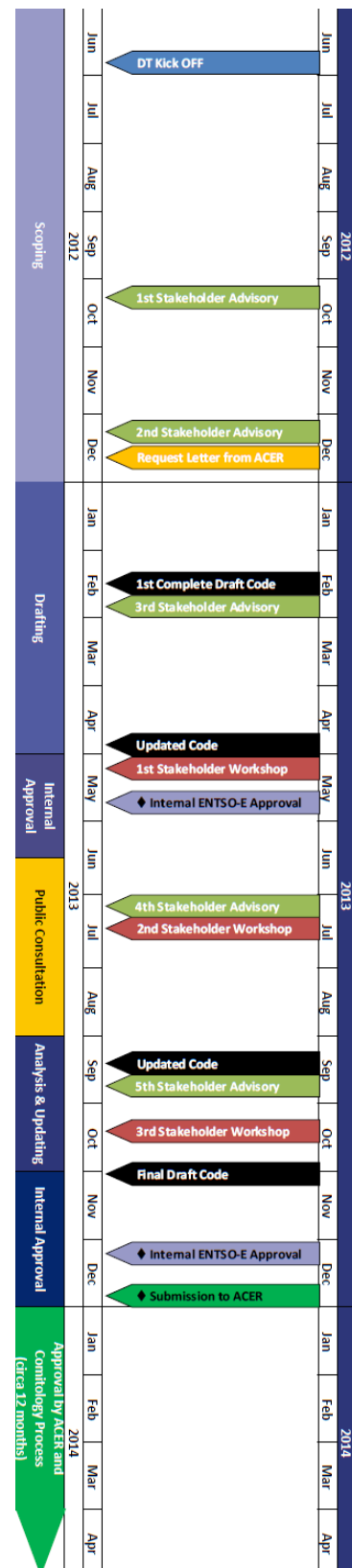


Figure 11: Stakeholder involvement during drafting of NC EB

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 12 below.

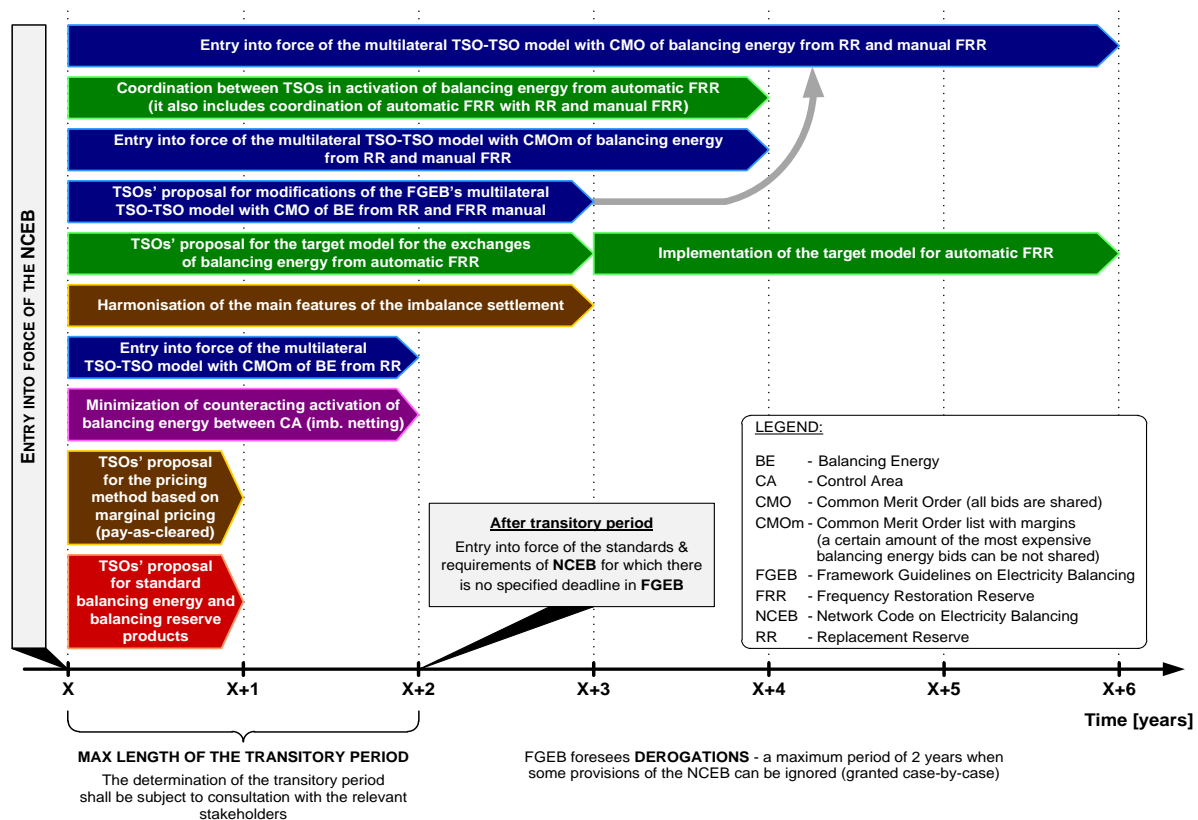


Figure 12: Entry into force of the NC EB

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 use, allocation and reservation of Cross Zonal Capacity for Balancing Capacity, 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.

The Network Code deviates from FG EB in Article 32(2). To enable the possibility of a reservation of Cross Zonal Capacity in a timeframe of less than one month ahead, the NC EB foresees that TSOs may develop an accelerated methodology for capacity provision. In such a situation, case-by-case decisions are not feasible due to time constraints. The implementation of such an accelerated methodology is, however, subject to both public consultation and regulatory approval.

5.3.3 Maximum limit of Imbalance Settlement Period

Chapter 5.3 of the Framework Guidelines states that *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. 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*.

The NC EB establishes a step-by-step process for the harmonization of the Imbalance Settlement Period and describes some criteria on which to base the Cost-Benefit Analysis (for example, Imbalance Settlement Period will have to be consistent with the Market Time Period and will have to take the resolution of the metering devices into account). As a departure from the Framework Guidelines, the NC EB leaves the Imbalance Settlement Period open and does not restrict it to 30 minutes or less.

In order to perform a comprehensive Cost-Benefit Analysis, the approach followed by the NC EB has been not to limit for the value of the Imbalance Settlement Period (30 minutes). This allows for a broader review of all the possible advantages and shortcomings as well taking into account all the current values of the Imbalance Settlement Period across Europe (e.g. 15 minutes, 30 minutes, 60 minutes). The intention of this approach is to be able to assess all aspects of the Imbalance Settlement Period to optimise the solution across Europe.

5.3.4 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

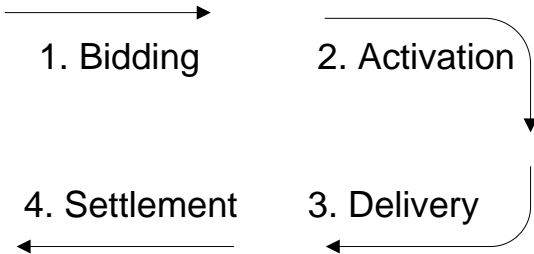
This section describes in more detail the structure and the content of the NC EB, and the principles on which the individual chapters have been built. The NC EB is built up as follows:

- **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: Use, Allocation and Reservation of Cross Zonal Capacity for Balancing Reserves (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.



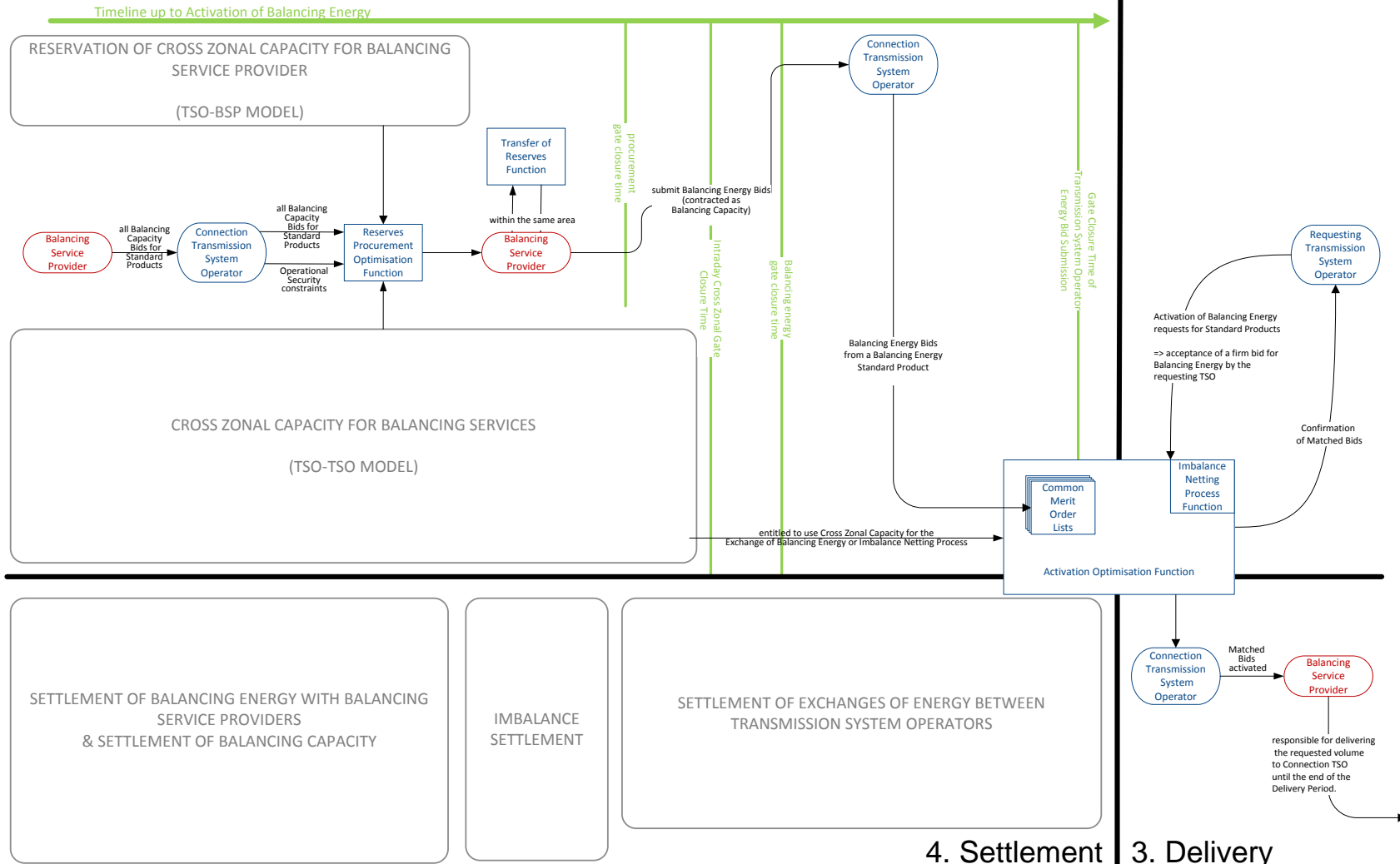
It is intended to provide an overview and therefore does not contain all aspects of the NC EB. It excludes details including some steps relating to:

- Particulars of some Balancing Service products
- DSO involvement
- Prequalification
- Central Dispatch Systems
- provide a balanced Position in the day-ahead timeframe if requested
- details for terms and conditions related to Balancing
- Fall back procedures
- etcetera

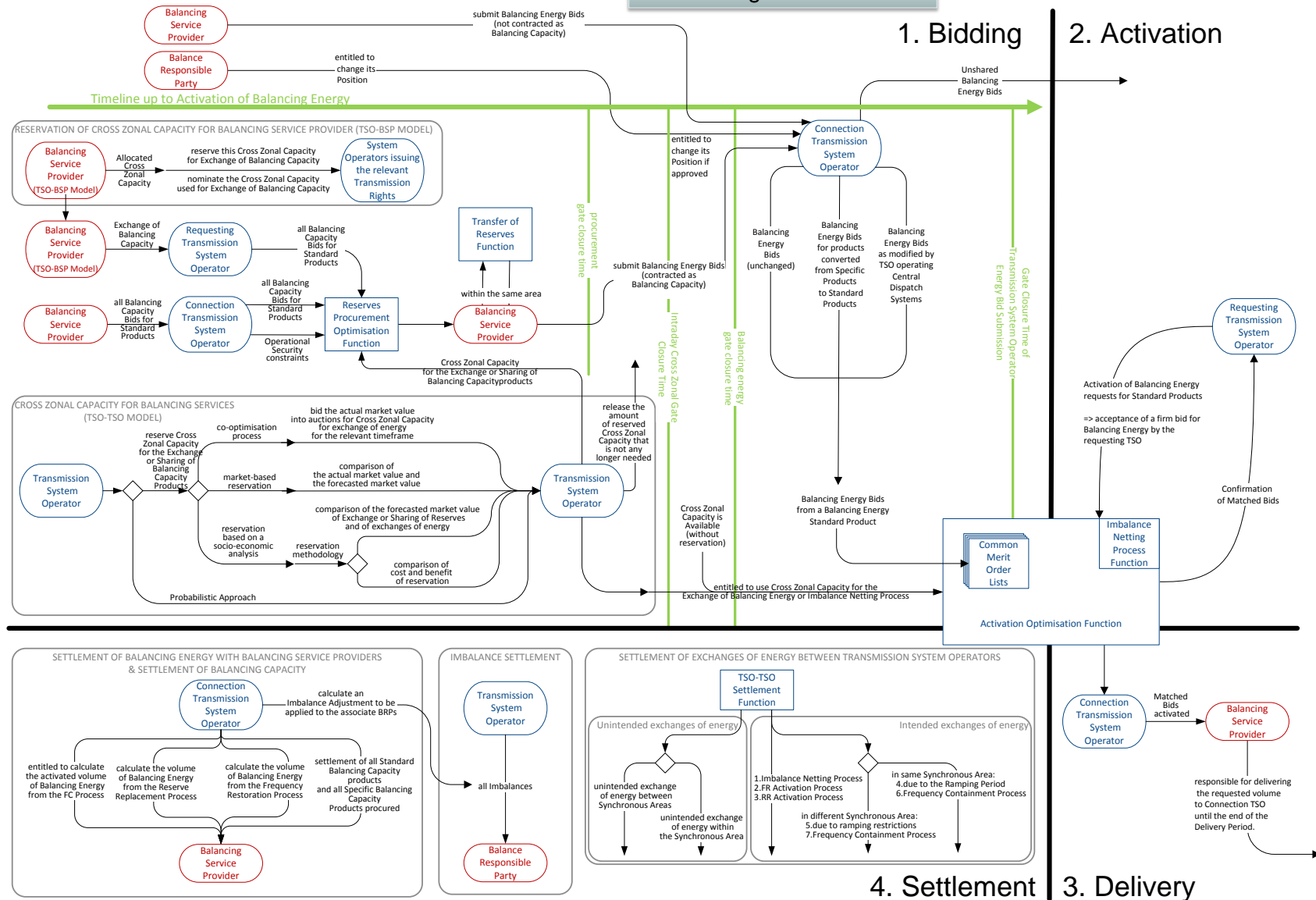
Balancing Process Flow

1. Bidding

2. Activation



Balancing Process Flow



CHAPTER 1 – GENERAL PROVISIONS

Article 1 - Subject Matter and Scope

This article defines the scope of this Network Code 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 this Network Code. 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 this Network Code.

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 which interrelated include:

- Sharing of Reserves, Exchanging of Balancing Capacity
- Bidding Zone, Responsibility Area, Scheduling Area, Synchronous Area, LRC Area, Coordinated Balancing Area, Imbalance Area

Article 3 – Regulatory Aspects

The following principles guide the NC EB and its application:

- Non-discrimination;
- Transparency;
- Optimisation between overall efficiency and total cost for all involved parties; and
- Assignment of cost to the real originator thereof.

Article 4 – 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 5 – 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 5.

Article 6 – Consultation

Article 6 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 Figure. During the drafting phase, be it by individual TSOs, groups of TSOs or other parties, 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 Article 6 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, which may for example be a TSO or NRA or third party. 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 finalize 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 13: Stakeholder involvement

Article 7 – Regulatory Approval

Article 7 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 items 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 contains three different requirements on how approvals have to be performed and differentiates between items which

- are of relevance for all countries where the code applies, and have to be approved by all NRAs;
- affect a limited number of countries, for example all systems of a synchronous zone when approval of TSO-TSO settlement, and have to be approved by all NRAs of those countries;
- only or predominantly affect Coordinated Balancing Areas, and are to be approved by NRAs who have jurisdiction in the area in which a Coordinated Balancing Area is established; and
- only affect the jurisdiction of one NRA, and are consequently to be approved only by that NRA.

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 network code, the code 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 Coordinated Balancing Area contains all element required to achieve regulatory approval prior to implementation of a CoBA as is detailed in Article 11 (LINK TO EXPLANATION OF ARTICLE 11) 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 finalized at the same time, a preliminary proposal could be submitted for regulatory approval, to be later on updated, as relevant.

Article 8 – 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.../.. of XXXX¹ [expected to be finalised in June 2013] 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;*
 - (i) *monthly financial balance of the control area, specifying:*
 - *the expenses incurred to the TSO for procuring reserves and activating balancing energy,*

¹<http://register.consilium.europa.eu/pdf/en/13/st06/st06003.en13.pdf>

- *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 8 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 9 – Delegation of Functions

Article 9 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 this code 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 Coordinated Balancing Area or wider, and where the creation of a functional body for this purpose would better achieve the targets of the Network Code. 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 code,

CHAPTER 2 - THE ELECTRICITY BALANCING SYSTEM

SECTION 1 PRINCIPLES OF THE BALANCING MARKET

Article 10 – General Objectives of the Balancing Market

As part of Article 9, the objective of the first paragraph is 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 Network Code. The objectives outlined in the second paragraph correlate directly to the FG EB and are consistent with those objectives outlined in the third paragraph which oblige all parties to apply ‘reasonable endeavours’ in implementing the NC EB.

Article 11 – Coordinated Balancing Area

The concept of Coordinated Balancing Areas (CoBA) 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.

The first step of the process to establish a CoBA is the submission of a common proposal from all Transmission System Operators intending to cooperate. This common proposal shall detail the framework of the terms and conditions related to Balancing and other main features which need to be defined on a CoBA-level.

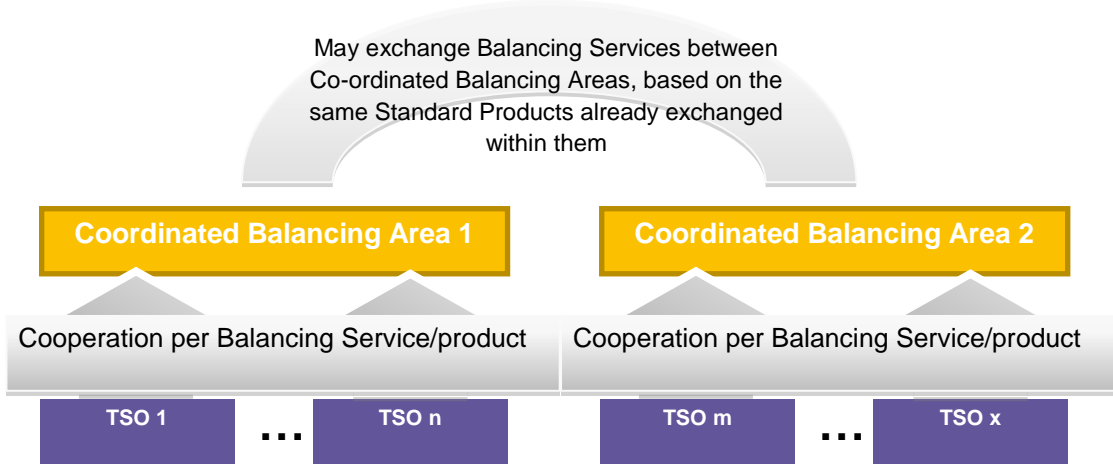


Figure 14: Model of Coordinated Balancing Areas in NC EB

The requirements are based on the obligation to cooperate with one or more adjacent 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 14. The FG EB specifies that the implementation of an Imbalance Netting Process should be obligatory and the CoBA in its initial form has applied this principle. 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.

Figure 15 shows the contrast between the mandatory concept of the CoBA for Balancing Energy products and the optional concept for corresponding Balancing Reserve products.

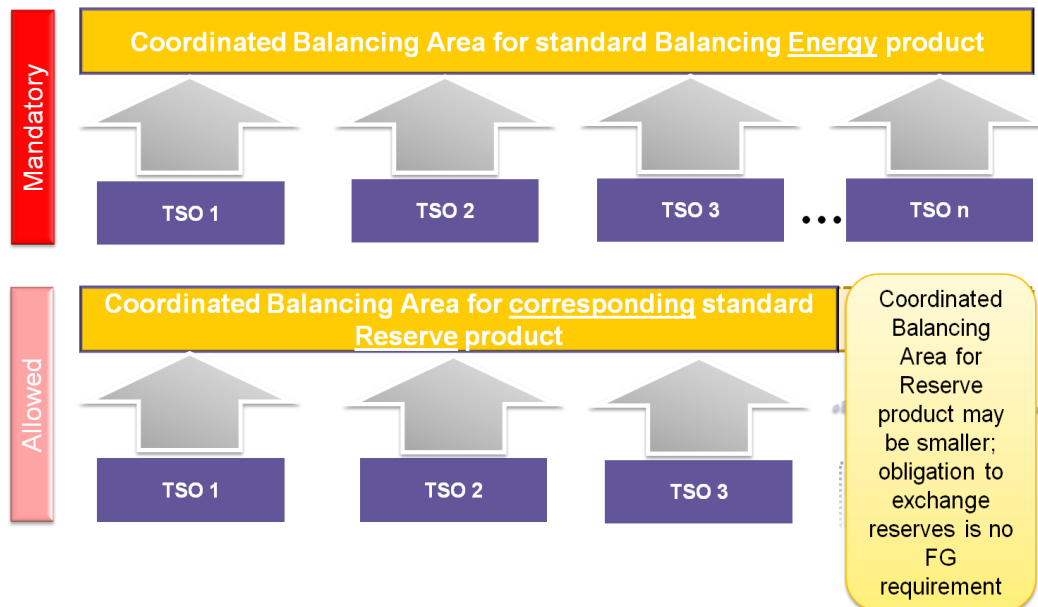


Figure 15: Area Definition in Balancing: Coordinated Balancing Area

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 target model and create a fully integrated and coordinated Balancing Market. This concept and its evolution are shown in Figure 16.

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 the NC EB comes into force. This approach of learning from experience while implementing the target 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 successful implementation of the CoBA concept in a timely manner and thus to achieve the targets behind both the FG EB and the NC EB.

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 CoBA 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 Coordinated Balancing Areas.
- **Merging:** The CoBA concept allows for the merging of two or more existing CoBAs into a new one for a given product.
- **Enlargement:** 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 may join the cooperation by simply adopting the mechanisms and principles applied therein.

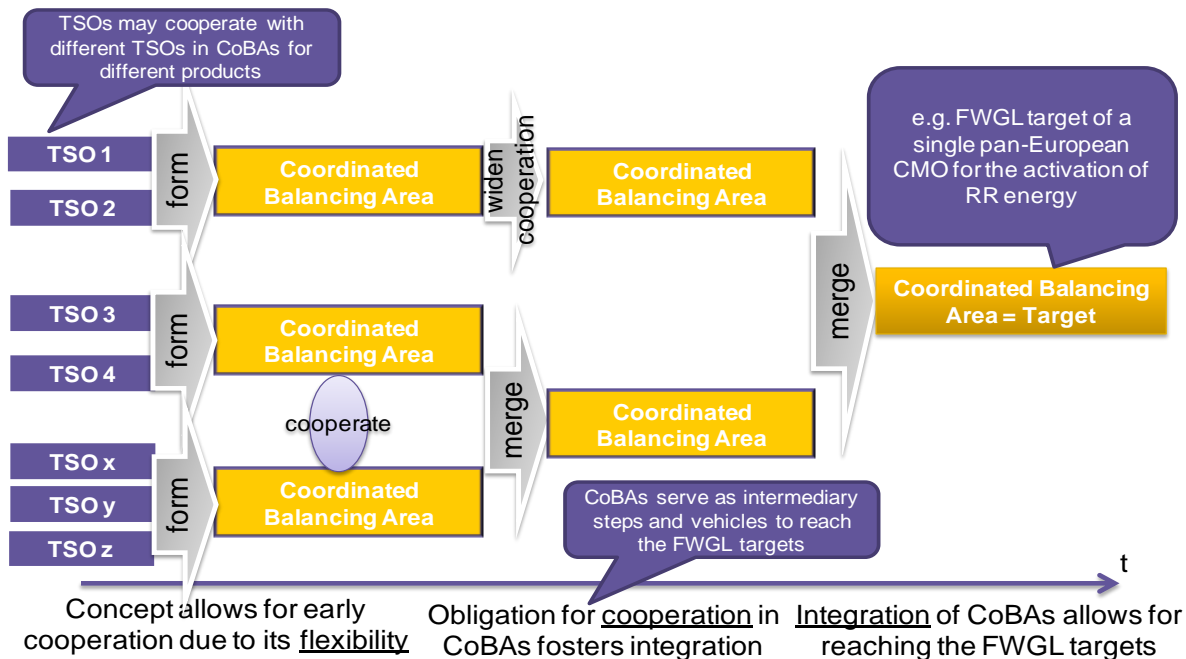


Figure 16: Evolution of the CoBA concept towards FG EB target

Based on this all TSOs of each CoBA shall cooperate closely in order to ensure that developments within the CoBA are consistent with the intermediate or target model. In the event that a TSO believe incompatibilities are emerging, these inconsistencies shall be reported to the Agency. Article 11 also clarifies that Balancing Energy Bids can be used for purposes other than Balancing within the COBA proposals.

SECTION 2 TARGETS

Article 12 – Targets for the Activation of Balancing Energy Bids used in Cross-Border Replacement Reserves Activation Process

This article sets out the ambitious targets for the development of the pan-European Balancing Market and in particular for Cross-Border Replacement Reserve Activation Process.

The targets are collected in a plan in Section 10.1 NC EB Implementation Plan

Article 13 – Targets for the Activation of Balancing Energy Bids used in Cross-Border Frequency Restoration Reserves Activation Process with Manual Activation

This article sets out the ambitious targets for the development of the pan-European Balancing Market and in particular for Cross Border Frequency Restoration Reserves Activation Process with Manual Activation.

The targets are collected in a plan in Section 10.1 NC EB Implementation Plan

Article 14 – Targets for the Activation of Balancing Energy Bids used in Cross-Border Frequency Restoration Reserves Activation Process with Automatic Activation

This article sets out the ambitious targets for the development of the pan-European Balancing Market and in particular for Cross-Border Frequency Restoration Reserves Activation Process with Automatic Activation.

The targets are collected in a plan in Section 10.1 NC EB Implementation Plan

Article 15 – Target on Imbalance Netting Process

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

The targets are collected in a plan in Section 10.1 NC EB Implementation Plan

Article 16 – Target 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 3 – Functions and Responsibilities

Article 17 – Role of the Transmission System Operators

Article 17 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. TSOs will use reasonable endeavours to ensure the Exchange of Balancing Energy within a Coordinated Balancing Area. Unanimous decision making rights are assigned to all TSOs within a Coordinated Balancing Area to ensure fairness and equal treatment among participants.

In order to ensure proper coordination for the coordinated Activation of Balancing Energy, to ensure the Activation of Balancing Energy at the lower costs, and to help TSOs forecast fast Imbalances and manage deterministic frequency deviations, the TSOs shall exchange close to real-time (e.g. about 15 minutes before real-time) short-term predictive forecasts of system conditions in a harmonised way. This will have to be supported by relevant IT tools.

Article 18 – Cooperation with Distribution System Operators

This article underlines the necessity of cooperation of DSOs, TSOs and BSPs for ensuring efficient and effective Balancing. This article establishes some requirements for DSOs in terms of provision of information to the TSO that could be necessary for the TSO to perform Balancing, complementing the requirements already established in the NC LFCR. Furthermore, this article analyses the cost sharing scheme that should be applied due to possible short-term curtailments or limitations in the distribution grid 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 exiting National law covering this matter, these costs would have to be borne by the DSOs originating the corresponding curtailments.

Article 19 – Role of Balancing Service Providers

This article deals with 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 prequalification test 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 Gate Closure Time.

Finally, as a general requirement, it is mandatory for BSP and the BRP impacted by the activation of a Balancing Energy Bid to be in the same area where the Imbalance is calculated. This requirement is a guarantee to operate safely and to simplify the imbalance calculation process and billing process.

Article 20 – Role of Balance Responsible Parties

In order to be balanced or help the system to be balanced according to the provision define by terms and condition 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. Any modification of the Position declared by the BRP shall be submitted to the Connection TSO. TSOs shall not be obliged to accept a change of Position by a BRP after the Intraday Cross Zonal Gate Closure.

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 after the process explained above concerning the modification of Position.

TSOs are entitled to require BSPs to have a balanced Position after the day-ahead process and this requirement would be included in the terms and conditions related to Balancing.

Article 21 – Functions in Coordinated Balancing Areas

This article outlines the functions and responsibilities in Coordinated Balancing Areas. 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 22 – 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. 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.

In order to ensure a proper coordination between TSOs and the consistency of the terms and conditions in each area, 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 Coordinated Balancing Area. This common framework contains harmonized principles to be applied to all the Responsibility Areas of the Coordinated Balancing Areas, ensuring a sufficient level of coordination between the TSOs and facilitating the evolution towards the different Target Models established in the NC EB. This common framework is submitted within the proposal of forming a Coordinated Balancing Area, for regulatory approval.

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

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 the TSO a reassessment of the terms and conditions.

Article 23 – Scheduling and Dispatch Arrangements

This article describes process of acknowledging TSO as TSO operating Central Dispatch System. To be classified as Central Dispatch TSO has to apply to the relevant National Regulation Authority and provide description of local market, scheduling and dispatch arrangements. The NRA shall decide whether acknowledge applying TSO as Central Dispatch or not and submit its decision to ACER. The application process has to be performed according to the same rules as approval processes described in Article 7.

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

CHAPTER 3: PROCUREMENT OF BALANCING SERVICES

SECTION 1 GENERAL PROVISIONS FOR PROCUREMENT

Article 24 – 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 Balancing Energy and Balancing Reserve products. 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 the product definitions no more than one year after the the NC EB comes into force, as specified by the FG EB. All TSOs are required to prepare a common proposal for standard Balancing Energy and Balancing Reserve products, including all needed detailed specifications of the characteristics. It should be noted that these standard Balancing Reserve and Balancing Energy product characteristics 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 17 below and explanation of the labelling below.

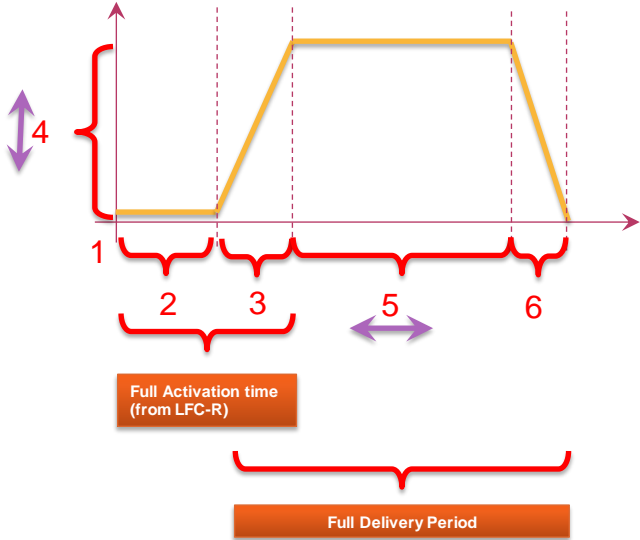


Figure 17: Balancing Reserve and Balancing Energy Products

- (a) Minimum and maximum quantity – minimum and/or maximum quantity of single bids expressed in MW. (See item ④ in the Figure 17 above.)
- (b) Full Activation Time – the sum of ②Preparation Period and ③Ramping 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 ③Ramping Period; ⑤ Minimum and maximum 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 Network Code LFCR requirements and as FRRa is used to restore frequency, Full Activation Time and deactivation time for Central Europe shall not be more than 15 minutes (900s), but can be shorter, depending of the needs of the TSOs in the Coordinated Balancing Area. This time duration depends on the Synchronous Area as explained in Network Code 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 Network Code LFCR requirements and as FRRm is used to restore frequency, Full Activation Time and deactivation time for Central Europe shall not be more than 15 minutes (900s), but can be shorter, depending of the needs of the TSOs in Coordinated Balancing Area. This time duration depends on the Synchronous Area as explained in Network Code LFCR. Mode of Activation shall be manual.

Replacement Reserves:

- Full Activation Time and deactivation time shall be more than the ones defined for FRR.
- Mode of Activation shall be manual.

Nonetheless, if Standard Products as defined by all TSOs are not sufficient for a particular TSOs to balance its area, 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 such products and volume should be transparent; shared with the national regulatory authority; and published in the annual report. Moreover they should not create inefficiencies or

distortion of the market. These products do not necessary fits with the characteristics of Standard Products and have to be adapted and shared with other TSO when system security is not compromised.

Article 25 – The Use of Standard and Specific Products

This article mandates TSOs to use relevant Standard Products and Specific Products to maintain system balance in the respect of NC LFCR and to ensure the safe and secure operation of the system. These products have sufficiently broad characteristics that they can be provided by service providers including renewables resources, small-scale generation, intermittent resources and demand side response.

Article 26 – 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 exchange of Balancing Services.

Article 27 – Modification of Bids

This article stipulated that Central Dispatch TSOs are entitled to use bids, which were submitted day-ahead for the purposes of Integrated Scheduling Process, in the process of balancing services exchange. 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 System have to follow exactly the same rules for bid submission as TSOs operating Self-Dispatch Systems, described in Articles 32, 36, 37 (the same timeline, requirement to submit everything except Unshared Bids, activation rules, etc.).

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

Article 28 – Balancing Energy Gate Closure Time

This article defines when bids of Balancing products become binding between BSP and TSO. Balancing Energy bids submitted by a BSP shall be firm with no possibility to adjust volumes and prices after the balancing energy gate closure time. A 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 automatically activated FRR. For automatically activated FRR 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 in some TSO operating with automatically activated FRR over the last number of years.

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 29 – 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 30 – 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 principles and general goals of this NC as specified at the beginning of the NC. Furthermore, in order to limit distortions between national procurement schemes, the duration of Balancing Reserve contracts for Balancing Capacity should be same regardless of whether the TSO commonly procure with other TSO(s) or not. Therefore, the NC 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 Coordinated Balancing Area. 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 Balancing Service Provider 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 Reserve as well.

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

Article 31 – Transfer of Balancing Capacity within a Responsibility Area of where appropriate Scheduling Area

Article describes transfer of Balancing Reserve within a Responsible Area or Scheduling Area, where applicable, i.e. only a connecting TSO is taking actions.

In some cases a BSP cannot comply or does not want to provide a Balancing Reserve 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 Operational Security of the grid, 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 Reserve of the same quality for which the primary contract has been concluded are defined in the NC. However, it is foreseen that further details should be included in the terms and conditions related to Balancing.

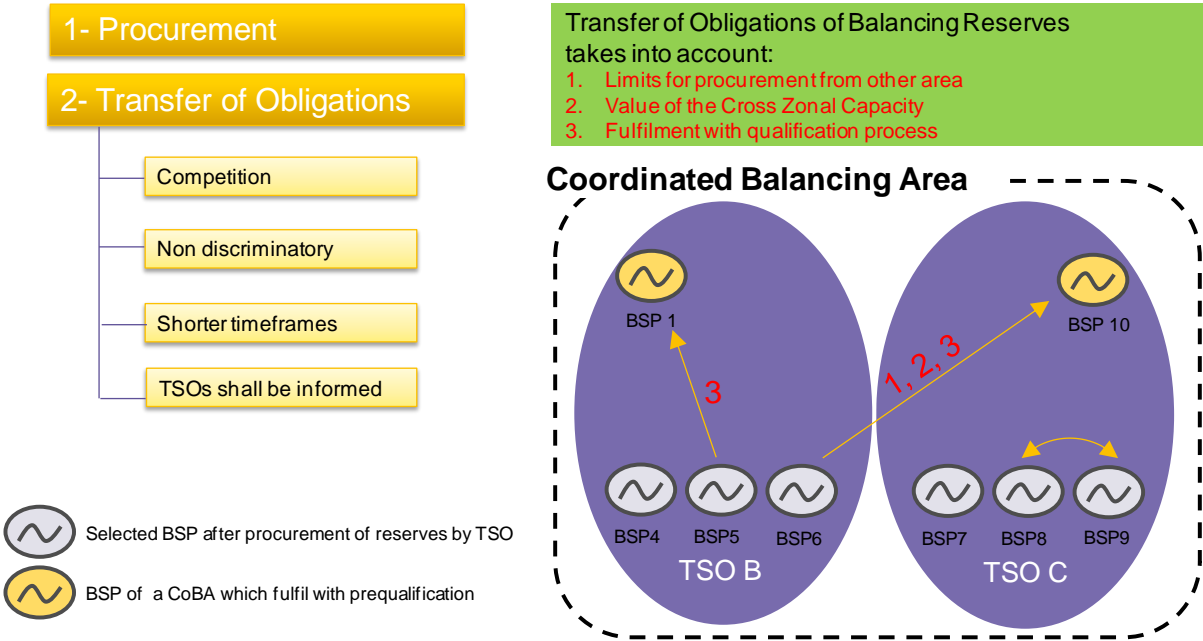


Figure 18: Transfer of Obligations of Balancing Capacity

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

Article 32 – General Provisions

It is of outmost importance to recognize that 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 TSO decides together with other 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 seeks for creating of basic rules same for each BSP participating in the common procurement and requires commonly procuring TSOs to cooperate and harmonize, to a certain level, rules and use the same contract duration, timing, pricing and function performing the procurement. In parallel same rules as for the “national procurement” – market based method for procurement, possibility to link upward and downward Balancing Capacity, approval of longer contract than one month upon regulatory approval –applies as well.

In case TSO(s) performs the Exchange of Balancing Reserve 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 Reserves Procurement Optimisation Function is a function commonly used by TSOs with to ensure 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 Normal State while taking into account dimensioning requirement and limits for the concept of Exchange of Reserves as defined in the NC LFCR - and availability and price of Cross Zonal Capacity ensured for such purposes.

The second stage is the possibility of the Transfer of Obligations of Balancing Capacity. As the first stage, this process is non-discriminatory and fosters competition but takes place in shorter timeframes and the TSOs must be informed of the activity. The Transfer of Obligations of Balancing Capacity between BSPs within a TSOs area must fulfil the qualification process. The Transfer of Obligations of Balancing Capacity between BSPs outside a TSOs area but still within a Coordinated Balancing Area, in addition to fulfilling the qualification process, must also respect the limits for procurement from the other area and take account of the value of Cross Zonal Capacity.

Article 33 – Transfer of Balancing Capacity within a Coordinated Balancing Area

Article describes transfer of Balancing Capacity between different Responsible Areas or Scheduling Areas, where applicable, 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 Responsible 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.

Article 34 – Transitional Procurement of Balancing Capacity for Frequency Restoration Reserves and Replacement Reserves 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 a TSO-BSP model (BSP from a Responsible Area or Scheduling Area, where applicable, have a contractual relationship with a TSO from a different Responsible Area). It was decided that the target 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. Before that it is wise to allow current practises in a form a TSO-BSP model but limit such existence in advance so TSOs and BSPs have time to adapt to the new rules.

Before the target models for Activation of Balancing Energy Bids are implemented TSOs and BSPs are, upon exemption, allowed to use a TSO-BSP model. However, preconditions defined in the NC are to be respected. When the target models are implemented a TSO-TSO model for Standard Products shall be used.

SECTION 4 PROCUREMENT OF BALANCING ENERGY

Article 35 – General Provisions

The NC EB defines the process to determine the pricing mechanism for Balancing Energy. The decision about pricing shall be taken by all TSOs by considering several criteria including correct pricing incentives to Market Participants, the efficient use of demand side response and an effective Common Merit Order List. 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.

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

TSOs operating in Central Dispatch Systems decide about the dispatch of the majority of units in each time period and act as a BSP for their whole LFC Area. The dispatch process usually starts the day before and lasts until real-time. This process is based on the bids and offers submitted by Market Participants, requiring therefore rules for submission and modification of bids and offers by Market Participants. Substantial changes of bids and offers 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 substantial increase incremental/ decremental bid's prices after obtaining information that their unit will be operating in 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 long in advance in order for the TSO to include them in the Day-Ahead integrated dispatch process, and the opportunity for Market Participants in Central Dispatch Systems to subsequently modify their bids may be limited.

SECTION 5 ACTIVATION OF THE BALANCING ENERGY

Article 36 – General Provisions

For the efficient Activation of Balancing Energy, This article of NC EB foresees that TSOs of a Coordinated Balancing Area define an Activation Optimisation Algorithm which is a common algorithm operated by an entity responsible for operation of the common 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 Activation Optimisation Algorithm. As the Connection TSO is responsible for operating the grid and has real-time data for its area, the Connection TSO is responsible for the direct physical activation of BSPs. 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 Activation Optimisation Algorithm 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”.

Article 37 – Activation Mechanism of Balancing Energy

This article describes the Activation of Balancing Energy and the required steps for TSOs. The main goal is to reduce the costs for Balancing Energy activation through a transparent, non-discriminatory, fair and objective process while taking into account technical and network constraints including those at a DSO level. 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 LFC Area to the Activation Optimisation Function, which includes the Common Merit Order Lists. This has to be done up to the Gate Closure Time for bid submission of TSOs, which will be 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 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.
- 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 fulfill the individual security needs.

As there might be an opportunity for TSOs to reduce the costs of Activation of Balancing Energy by optimizing the activation of different Standard Balancing Products in different Common Merit Order Lists, such optimisation functions shall be established by the TSOs and interpreted as global optimisation functions.

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 Capacities have to be taken into account in order to allow for a firm delivery of the activated Balancing Energy.

The major consideration for this global optimisation function is the consideration of the technical constraints of each Standard Product for Balancing Energy. 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 19, Coordinated Balancing Area AB and Coordinated Balancing Area CD are two Synchronous Areas connected by a HVDC link. Area A and Area B cooperate with Reserve procurement and Activation of Balancing Energy. Area C and Area D exchange of Balancing Energy.

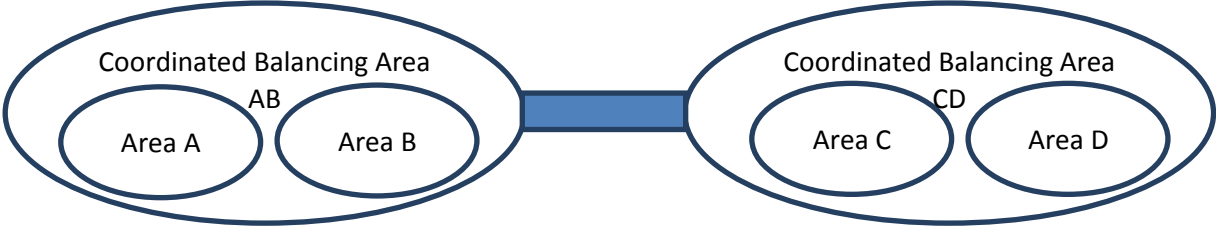


Figure 19: Coordinated Balancing Area Example

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 Coordinated Balancing Area 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 Coordinated Balancing Areas. There may be better alternatives. These examples just show that different combinations are possible.

a) Common Merit Order List of Coordinated Balancing Area AB is totally available for TSO C

This means that Common Merit Order List for Coordinated Balancing Area AB have at least 125 MW available - 100 MW in Area B and 25 MW in Area A. Activation Optimisation Function in Coordinated Balancing Area 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 Coordinated Balancing Area CD, the bids will be available for the whole Coordinated Balancing Area 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 Coordinated Balancing Area 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 Coordinated Balancing Area CD, Area C contributes 25 MW to the Common Merit Order of Coordinated Balancing Area 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 Coordinated Balancing Area AB. In Coordinated Balancing Area CD TSO C may put these bids on the Common Merit Order of Coordinated Balancing Area 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. Each TSO is responsible for its LFC Area and is connected to other LFC Areas by tie lines or Interconnectors. These may be organised together with other TSOs into a Coordinated Balancing Area (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 capacities on these interconnectors for the exchange of energy, these capacities will also be used for the Exchange and Sharing of Balancing Capacity, for the Exchange of Balancing Energy as well as for Imbalance Netting.

As Cross Zonal Capacities 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 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 these capacities by demonstrating a gain in Social Welfare while not endangering secure operation. This results in a sharing of the available Cross Zonal Capacities 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 which includes Imbalance Netting.

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

Figure 20: Illustration of alternative ways on how TSOs can use Cross Zonal Capacity for Exchange of Balancing Capacity. illustrates the alternative ways how TSOs can reserve Cross Zonal Capacity for the Exchange of Balancing Services. The possible methods are shown for Exchange and Sharing of Reserves and are further described in the following explanations.

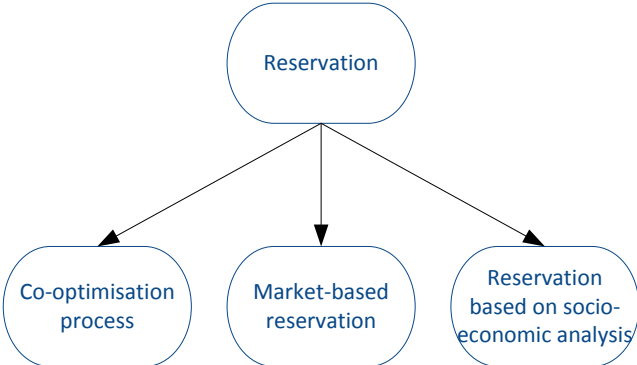


Figure 20: Illustration of alternative ways on how TSOs can use Cross Zonal Capacity for Exchange of Balancing Capacity.

Article 38 – Reservation of Cross Zonal Capacity for Transmission System Operators

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 LFC Area, there is the need for TSOs to obtain access to interconnection capacities. When the Probabilistic Approach is not sufficient TSOs can only ensure available CZC (cross-zonal capacity) through reservation of CZC. In order not to interfere into market arrangements TSOs will only reserve CZC 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 or Sharing of Balancing Capacity with market values for exchange of energy. The NC foresees three processes for this:

- 1) the co-optimisation process, which is detailed in Article 40.
- 2) the market based reservation process, which is detailed in Article 41.
- 3) reservation based on a socio economic analysis, which is detailed in Article 43.

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 these capacities will not be available for other Market Participants. If the reserved Cross Zonal Capacity is no longer needed for Exchange or Sharing of Balancing Capacity it shall be released, so it could be used by other Market Participants.

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 or Sharing of Balancing Capacity, as calculated by TSOs.

Article 39 – Calculation of market value of Cross Zonal Capacity

Market values of Cross Zonal Capacity for Exchange or Sharing of Balancing Capacity and for exchange of energy need to be calculated to be able to perform the co-optimisation process or the market based reservation process. The market values can be actual; based on bids from Market Participants; or forecasted market values. When forecasted market values is used it must be achieved or established through a predefined and transparent methodology to define the forecasts.

Article 40 – Methodology of a co-optimisation process

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

Article 41 – Methodology for a market-based reservation

If no transmission capacity auction is available for the relevant timeframe for procurement of Balancing Capacity the Transmission System Operators can perform the market based reservation process. In this process the cost benefit analysis is done by comparing the real market value for Exchange or Sharing of Balancing Capacity with a forecasted market value for exchange of energy.

Article 42 – Methodology for a reservation based on a socio-economic analysis

If it is not possible to calculate any actual market values for Exchange neither for Balancing Capacity nor for energy, a socio economic analysis can be performed.

Either forecasted market values can be used for either Exchange or Sharing of Balancing Capacity and for exchange of energy, or a pure cost benefit analysis can be performed. The latter can for example be of interest if investment costs are included in the cost benefit analysis.

Article 43 – Reservation of cross zonal capacity for Balancing Service Provider

If the TSO- BSP model is applied the BSPs are allowed to use Physical Transmission Capacity procured in ordinary transmission capacity auctions for reservation of Cross Zonal Capacity.

SECTION 2 CROSS ZONAL CAPACITY FOR THE EXCHANGE OF BALANCING ENERGY

Article 44 – Use of Cross Zonal Capacity for the Exchange of Balancing Energy

Cross Zonal Capacity available after GCT of Intraday market can be used for Exchange of Balancing Energy. Available Cross Zonal Capacity after Intraday Market can either be due to reservation or that it Cross Zonal Capacity was not a scarcity in that direction.

Article 45 – Calculation of Cross Zonal Capacity for the Exchange of Balancing Energy

As default the available Cross Zonal Capacity after gate closure of the Intra Day Market shall be used for Exchange of Balancing Energy. When parts of the Cross Zonal Capacity is used due to Exchange of Balancing Energy or any other reasons the available Cross Zonal Capacities shall be updated in sufficient time.

If Transmission System Operators manage to create an improved capacity calculation for the Balancing Timeframe they are allowed to introduce this methodology after regulatory approval.

Article 46 – Pricing of Cross Zonal Capacity for the Exchange of Balancing Energy

TSOs do not get access to Cross Zonal Capacity for the Exchange of Balancing Energy for free. Cross Zonal Capacity for TSO must be priced. The NC EB requires that the pricing method used to calculate the price for Cross Zonal Capacity is either consistent with pricing methods in other timeframes where Cross Zonal Capacity is priced or both meets the framework established in this article and follows the regulatory approval requirements.

CHAPTER 5: SETTLEMENT

SECTION 1 SETTLEMENT PRINCIPLES (GENERALITIES)

Article 47 – 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.

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:

1. 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
 - c. Settlement of the Unintentional Deviations (FWGL)
3. TSO to BRP: Explicitly mentioned in FG EB (Section 4)
- a. Imbalance Settlement

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...),
- 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).

Additional components of TSO-TSO intended exchanges of energy due to e.g. due to ramping restrictions as defined in NC LFC-R on cross border schedules, due to Frequency Containment Processes within a Synchronous Area as described in NC LFC-R, 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 48 – 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 49) 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 50) is obligatory.

The settlement of Balancing Energy from the non obligatory Reserve Replacement Process Art 51) is only applicable for where this process is implemented

Article 49 – Balancing Energy from 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 50 – Balancing Energy from Frequency Restoration Process

This article describes the settlement of Balancing Energy from Frequency Restoration Process. The general principles described in Article 49 will apply.

Article 51 – Balancing Energy from Reserve Replacement Process

This article describes the settlement of Balancing Energy from Reserve Replacement Process. General principles described in Article 49 will apply.

Article 52 – Imbalance Adjustment to 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.

SECTION 3 SETTLEMENT OF EXCHANGED ENERGY BETWEEN TRANSMISSION SYSTEM OPERATORS

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

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

Article 53 – 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 and so 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. Cross Border Frequency Restoration Activation Process
3. Cross Border Reserves Replacement Activation Process
4. The energy associated with the ramping (applicable between TSOs in the same Synchronous Area)
5. The energy associated with HVDC ramping (applicable between TSOs in different Synchronous Areas)
6. Frequency Containment Process in the same Synchronous Area
7. Frequency Containment Process between Synchronous Area

In order to ensure proper functioning of cross border Balancing Market, all energy 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 this settlement will appropriately reflect overall benefits arising from avoidance of counter Activation of Balancing Energy through the Imbalance Netting Process and to encourage TSOs to participate.

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

Article 54 – Unintended Exchanges of Energy

The term unintentional deviations as used in FWGL 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.

TSO-TSO settlement is the first mechanism that is implemented on a pan-European scale, extending beyond Coordinated Balancing Areas. 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. Withdrawals and injections from Interconnectors however cannot be covered by BRP. The Imbalance Settlement is calculated at a Relevant 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 for single 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 55 – Imbalance Settlement Period

In this article, the NC EB establishes a step-by-step process for the harmonisation of the Imbalance Settlement Period.

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. 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.

Harmonization may not force those systems currently on 15 mins to go back to 30 mins. Considerations would include reconfiguring existing software, systems and equipment; or installing new software, systems and equipment which are asymmetric processes in terms of cost structure. Considerations would also include previous and future investment by Market Participants and System Operators in such software, systems and equipment.

The following graphs show the process for harmonisation of the Imbalance Settlement Period depending on the decision taken by all the NRAs after the Cost-Benefit Analysis, taking as a reference the approval of the methodology for establishment of the terms and conditions within a Cost-Benefit Analysis.

If the decision is “yes” (i.e. the Imbalance Settlement Period should be harmonised) the process would be as shown in Figure 21:

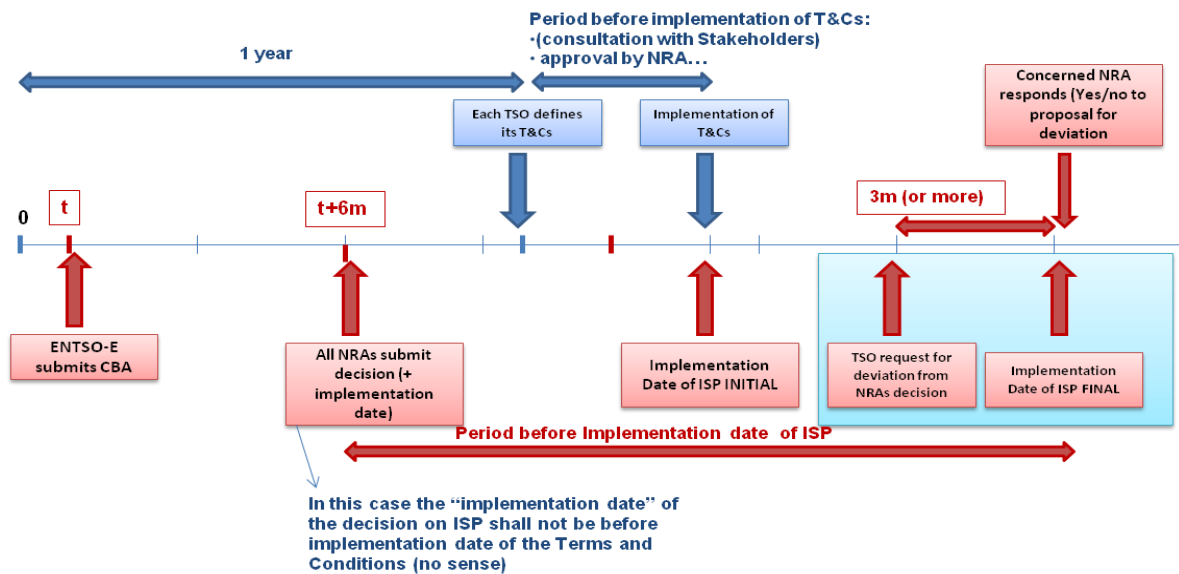


Figure 21: Process if Imbalance Settlement Period is harmonised

If the decision is "no" (i.e. it is not necessary to harmonize at this point the Imbalance Settlement Period) the process would be as shown in Figure 22:

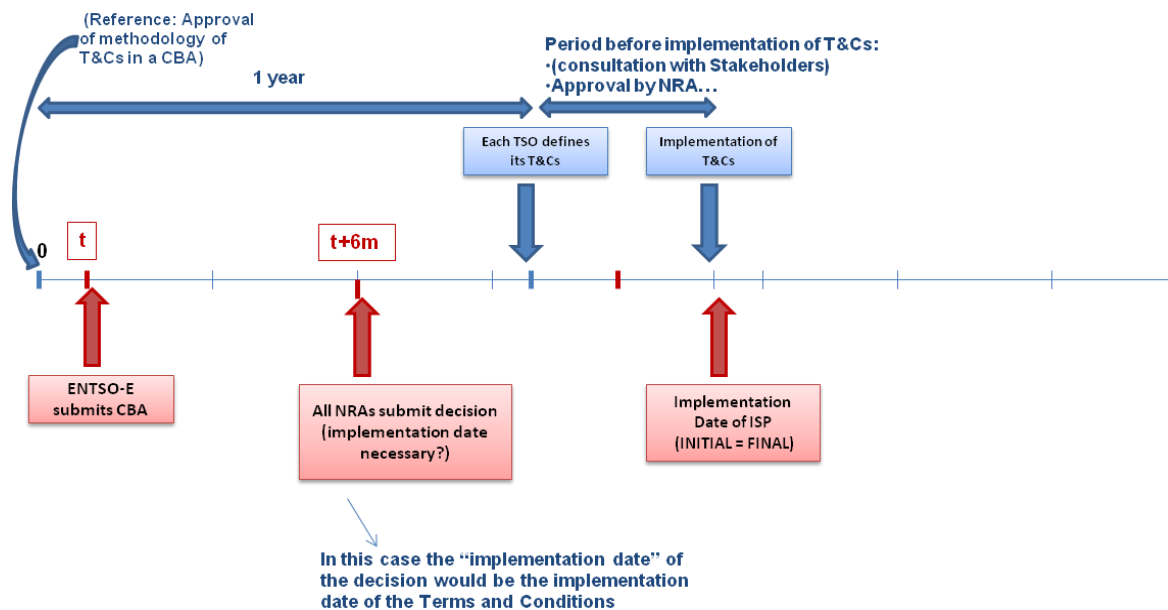


Figure 22: Process if Imbalance Settlement Period is not harmonised

Article 56 – 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.

The Article defines the directions of the Imbalance.

The Imbalance has a geographical aspect: for which area will an Imbalance be calculated, for which area will Imbalance Prices be calculated.

For most TSO's its Responsibility Area coincides with 1 Scheduling Area and 1 Bidding Zone; I 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 57 – 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 a 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 FWGL 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 following situations have to be covered:

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

Current designs feature two different Imbalance Pricing concepts: Single and Dual Pricing:

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

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

The reference price is to be established by the TSO in absence of a marginal price 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.

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 it 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 -
		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 -
		marginal +		marginal +
	reference		reference	

Legend
 Up
 Down
 Back
 Stay/Unclear

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 -
		marginal +		reference
	reference		marginal -	

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 +		marginal -
		marginal +		reference
	reference		marginal -	

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 these price conditions:

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 -

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.

SECTION 5 SETTLEMENT OF BALANCING CAPACITY

Article 58 – Procurement of Balancing Capacity within a Responsibility Area

Each TSO must perform the settlement for all the BSPs (associated with a BRP inside its LFC Area) that have provided Balancing Reserve Products to the TSO (either for internal use, or for Exchange or Sharing within a Coordinated Balancing Area).

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 59 – 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 Coordinated Balancing Area.

If applicable, the TSOs will settle among themselves the Reserve products exchanged in the Coordinated Balancing Area (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 Reserve 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 Reserve product.

SECTION 6 SETTLEMENT AMENDMENTS

Article 60 – 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 21) 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 Coordinated Balancing Area.

Article 61 – 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 Coordinated Balancing Area. The TSOs of each Coordinated Balancing Area are obliged to respect these principles and to develop the algorithms relevant for the Balancing cooperation in their Coordinated Balancing Area. 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 62 – 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 Coordinated Balancing Area, 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 63 – 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 code 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 target model is 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 64 – 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 65 – Transition Period

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

Article 66 – 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 67 – Entry into Force

The Network Code will enter into force 20 days after its publication. However, due to the various consultations and approvals, the application of different parts of the Network Code 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 Network Code (the timings are “no later than”) and the time needed to approve parts of the Network Code (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

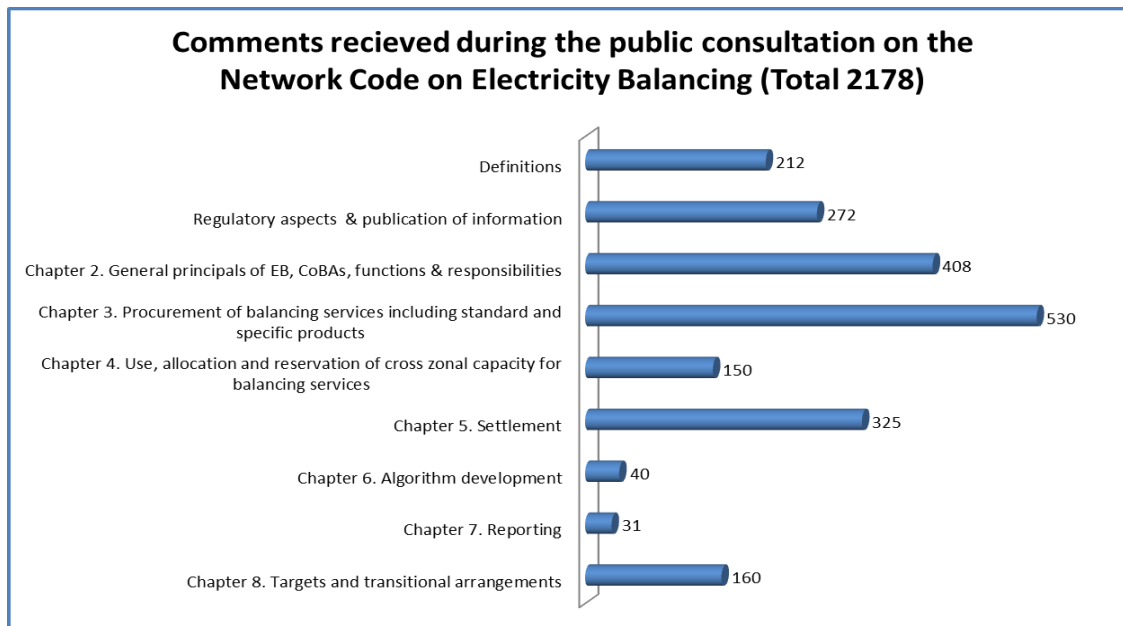
In accordance with Article 10 (1) of Regulation (EC) 714/2009, ENTSO-E holds public consultations at an early stage and in an open and transparent manner on all network codes. This Chapter provides information on how the outcome of the public consultation on the NC EB and how the received comments have 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 Network Code on Electricity Balancing. 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 code, the stakeholder attention was particularly strong on Chapter 2 and Chapter 3 of the Public Consultation version of the NC EB. The comments are summarized in the table below.

Table 1. Summary of the Public Consultation



The following 41 stakeholder organizations submitted responses to the Public Consultation.

Respondent Organizations		
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	FEPEG	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 this Network Code. 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 target 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 intermediate or the final target model together with an implementation plan 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 7 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 ill understood 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 LFC-R the use of the term Balancing Reserves has been changed to Reserve 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 Coordinated Balancing Area. 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 Network Code 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 COMITOLOGY 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

10.2 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 crosschecks 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. At the time of issue of this version of the supporting document the ENTSO-E drafting team was in the middle of another crosscheck process and therefore a finalised version of a crosscheck was not available at this time.

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 code published on 17 June.

In order to provide a clear oversight of comments and responses, the issues mentioned in this document may have been summarized 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 network code 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	18 comments from 9 respondents were received on this article. 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, 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
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	not cover Significant Grid Users.
Changes made	1) No change 2) No change
Explanation for change or no change	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	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. 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. Furthermore, to ensure the link to NC LFC-R Balancing Reserves has been replaced with Balancing Capacity and Sharing of Balancing Reserves has been changed to Sharing of Reserves.

Article 3 – REGULATORY ASPECTS

Summary	8 comments from 6 respondents were received on this article. 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	No changes
Explanation for change or no change	The two provisions are fundamental requirements for the code and should be kept.

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. 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	No changes
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) The TSO will bear the responsibility, yet however, TSOs are allowed to delegate tasks.

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	No change
Explanation for change or no change	Article 5 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 in 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
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	imbalance settlement
Changes made	No change
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 Article

Article 7 – REGULATORY APPROVALS

Summary	<p>180 comments were received. The major themes:</p> <ol style="list-style-type: none"> 1) Approval shall be transfer 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) Introduction of paragraph 4. 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 the new paragraph 4 introduced to capture regions that are not aligned to Coordinated Balancing Areas. 2) This article reflects changes in the rest of the code.

Article 8 – PUBLICATION OF INFORMATION

Summary	<p>28 comments from 11 respondents were received on this article.</p> <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

	<p>EB.</p> <p>5) Change. Information in the new article 8(3) will be published in English and a delegation article is included.</p> <p>6) No change</p> <p>7) Change. Relevant area is no longer used.</p>
Explanation for change or no change	<p>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.</p> <p>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.</p> <p>3) The approaches for provision of Cross Zonal Capacity are in line with FG. No changes to subparagraphs b and d are proposed.</p> <p>4) Cross Zonal Gate Opening Time has been removed from the entire NC EB to streamline and increase readability.</p> <p>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</p> <p>6) Sufficient to state that information shall be published in time to avoid creating competitive advantage to any individual or group of individuals</p> <p>7) Previously used area definitions are now used in the NC EB to avoid lack of clarity.</p>

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 prioritise 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) 3) Application of the code to Market Participants.
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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. 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 isn't 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. Objective of 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 – COORDINATED BALANCING AREA

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 LFC&R. 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.
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	<ul style="list-style-type: none"> 8) Publication / involve Market Participants in FW. 9) More harmonisation is required. 10) Merge FW with T&C. 11) Limit exchange of balancing services to CoBA / do not allow exchange beyond CoBA. 12) No limitation of inter CoBA cooperation to TSO-TSO Model. 13) Increase transparency in way how TSOs cooperate. 14) Replace intentional with measurable requirements. 15) Improve clarity/reference to targets. 16) Publish data which is exchanged between TSOs. 17) ACER should not only be notified, but also take action on incompatibilities. 18) Clarify what incompatibilities refer to.
Changes made	<ul style="list-style-type: none"> 1) 1)-3) No change 4) Change 5) 5)-13) No change 14) None here, but the introduction of the new articles on the intermediary targets add clarity and ambition on the way to reach the targets. 15) No change 16) No change, Transparency Regulation and Balancing Code contain all transparency requirements ensuring market functioning 17) Amendment to Article 11(8): All Transmission System Operators shall report to the Agency as soon as incompatibilities between the actual development within the Coordinated Balancing Areas and the developments foreseen in the intermediate model or the target model in accordance with CHAPTER 2 SECTION 2 are identified. 18) No change.
Explanation for change or no change	<ul style="list-style-type: none"> 1) No change, because that would not be a sufficient requirement / introduce reference to LFC&R not taken up, not needed. 2) More comprehensive articles on intermediary targets create ambition. 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. 4) Included in new version of the NC. 5) Additional clarity on the identification of incompatibilities should be sufficient to ensure the appropriate inclusion of peripheral TSOs (additional sentence in NC). 6) Topic of Art. 12. 7) A certain level of governance and conditions is needed. 8) The T&C are being consulted and approved. 9) - 10) the FW for T&C is being approved & is a crucial element for integration and harmonisation 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 12) the TSO-TSO Model is the target model of the NC 13) various items are consulted and all relevant ones for market functioning, participation and integration are being consulted or approved

	<ul style="list-style-type: none"> 14) Changes are expected at a later stage 15) improve clarity/reference to targets 16) all data necessary for market participation is required to be published in transparency regulation and this NC 17) no change along the lines of the first set of comments, as NC cannot grant new competences to ACER 18) change proposals clarify what are incompatibilities and answers relevant comments.
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Article 11 – ROLE OF THE TRANSMISSION SYSTEM OPERATORS

Summary	<p>76 comments were received on this article. The major concerns emerging are:</p> <ul style="list-style-type: none"> 1) The issue of 'unanimity' and decision making and 'loyalty'. 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 Transmission System Operators 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	<ul style="list-style-type: none"> 1) No change. 2) "if foreseen under national law" removed. 3) delegation of tasks moved to new Article Delegation of Functions, which covers delegation of responsibility for Imbalance Settlement and the assessment of the third party's ability. 4) No change. 5) No change. 6) No change
Explanation for change or no change	<ul style="list-style-type: none"> 1) This has undergone legal review and is a cross-codes issue 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 termination clauses as standard in case the third party fails in their tasks/responsibility. 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 DISTRIBUTION SYSTEM OPERATORS

Summary	29 comments were received on this article. The major themes emerging are: 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 LFC&R) in terms of information exchanges. 3) Paragraph regarding curtailment costs sharing should be reviewed or deleted.
Changes made	1) No change. 2) Change. 3) Change.
Explanation for change or no change	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 LFC&R. 3) The paragraph regarding curtailment costs sharing has been reworded in order to enhance clarity.

Article 13 – ROLE OF THE BALANCING SERVICE PROVIDERS

Summary	36 comments were received on this article. The major themes emerging are: 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 the Art.22.1.c. 4) Request to add the precision that BSP with contracts shall offer bids on “relevant time period and products”. 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. 6) request clarity for activation of bids by the TSO before / after GCT
Changes made	1) introduction of relevant definitions for Gate Closure Time, it was a lack of the draft code for public consultation. 2) consistency within the code of the matter of association 1 BSP / several

	<p>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 connection 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 LFC-R code.</p>

Article 14 – ROLE OF BALANCING 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> <p>3) Introduction of targets of BRPs to highlight that BRP are expected to be balanced and are responsible for settlement.</p>

Article 15 – FUNCTIONS IN A COORDINATED BALANCING AREA

Summary	<p>39 comments were received on this article. The major themes emerging are:</p> <p>1) exchange of reserves should be the base case in all CoBAs</p>
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	<ol style="list-style-type: none"> 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	<p>113 comments were received on this article. The major themes emerging are:</p> <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 self-dispatch) 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 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 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)
Changes made	<ol style="list-style-type: none"> 1) No change. 2) Change. 3) No change.

	<ul style="list-style-type: none"> 4) No change. 5) Change. 6) Change. 7) No change. 8) No change. 9) No change.
Explanation for change or no change	<ul style="list-style-type: none"> 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. 2) Last sentence regarding possible specificities for Central Dispatch in the development of the framework has been deleted 3) The development of the framework will be the responsibility of TSOs and the framework will be subject to Regulatory Approval. 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. 5) A clearer description is provided with the new target articles 12-16 6) The relationship between BSP and the BRP(s) has been described in articles 10, 19 and 20. 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. 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. 9) Covered by article 5 on Confidentiality

Article 17 – REQUIREMENTS FOR STANDARD AND SPECIFIC PRODUCTS

Summary	<p>55 comments were received on this article. The major themes emerging are:</p> <ul style="list-style-type: none"> 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 more clear that specific products should be an exception. 2) Specific products shall not only be visible but also shared for exchange of balancing energy, in accordance with FWGL. 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, fixed start/stop time to cover schedule shifting. 5) More clarity is requested when referring to the NC LFC-R. 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 code 8) Need for more consistency between 17.2 and 17.5 (ENTSOE vs. COBA).
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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 product are defined from some standardised characteristics of products. 2) Specific products 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 ENTSOE 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 LFC-R rule 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 code. Indeed is could not be foreseen how the products will change in the future, and ENTSOE is compliant with guidelines with a timeframe on one year after entry into force of the code.

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) proposal to add additional aim of usage balancing products. 2) Specific products may be used ONLY if standard ones are insufficient - supporting standard products.
Changes made	<p>No changes in Art. 18. 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	<ol style="list-style-type: none"> 1) No change: 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.

	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).
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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 product 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 bal. 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 CDS systems and providing more detailed rules regarding bids modification process in Central Dispatch Systems. 3) No change. 4) No change. 5) No change. 6) No change. 7) No change. 8) No change.
Explanation for change or no change	<ol 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. TSO has 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 the specific product before submission to the CMOL, increasing in this way market liquidity (by decreasing products granularity).

	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>
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Article 20 – FIRMNESS OF BALANCING ENERGY BIDS AND BALANCING GATE CLOSURE TIME

<p>Summary</p>	<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) Connection Transmission System Operators 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 Connection Distribution System Operator by the Connection Transmission System Operator 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
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	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 Coordinated Balancing Area 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.
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	<ol style="list-style-type: none"> 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 minimized. 10) The organization 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 a balancing reserve were added. 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 a balancing reserve. Sections are divided on a national level (one TSO) and on a CoBA level (two or more TSOs).
Explanation for change or no change	<ol 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> <ol style="list-style-type: none"> 1) Exchange or Sharing should be mandatory, not optional. 2) Align wording of “Exchange” and “Sharing” with LFCR NC 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.
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Changes made	<ol style="list-style-type: none"> 2) Wording has been aligned with LFCR NC 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	<ol 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 standardized 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	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.
Changes made	Change.
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 target model.

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 taken into account when pricing method is proposed. 2) art 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 provisions 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

	<p>and so also different pricing methods make sense, like e.g. auction/continuous trade.</p> <p>4) Measure helps TSO to secure required balancing resources and it is also specifically allowed by FWGL.</p> <p>5) Application of different pricing methods is covered by other paragraphs and no special treatment for Central Dispatch is required.</p>
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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 code, all Transmission System Operators shall establish detailed rules for the activation of Balancing Energy consistent with Article 11(1 - new article) and 17(5) and 17(6). 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. 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 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 target model the exchange of balancing energy will be based on a TSO-TSO model with a Common Merit Order List.

	<p>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 and Standard Products not shared on the Common Merit Order List.</p> <p>5) The new Article 1(4) states that the NC EB only covers Normal State.</p>
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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. 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, link to CACM and vague formulations in draft. 2) Several comments want to forbid all kind of reservation or just
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	<p>reservation not based on co-optimisation.</p> <p>3) Some comments suggest to introduce new methodologies like counter-trade or BSP using CZC to exchange reserves.</p>
Changes made	<p>1) The text is heavily restructured and changed in order to make the text clearer and to increase consistency with other codes.</p> <p>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.</p> <p>3) Use of counter trade is not introduced as methodology.</p>
Explanation for change or no change	<p>1) -</p> <p>2) Reservation of Cross Zonal Capacity will in most cases be necessary to enable Exchange or Sharing of Balancing Reserves, which potentially is followed by increased socio economic welfare.</p> <p>3) -</p>

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> <p>1) Several comments on unclarity due to: lack of definitions, link to CACM and vague formulations in draft.</p> <p>2) Several comments want to forbid all kind of reservation or just reservation not based on co-optimisation.</p> <p>3) Some comments suggest to introduce new methodologies like counter-trade or BSP using CZC to exchange reserves.</p>
Changes made	<p>1) The text is heavily restructured and changed in order to make the text clearer and to increase consistency with other codes.</p> <p>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.</p> <p>3) Use of counter trade is not introduced as methodology.</p>
Explanation for change or no change	<p>1) -</p> <p>2) Reservation of Cross Zonal Capacity will in most cases be necessary to enable Exchange or Sharing of Balancing Reserves, which potentially is followed by increased socio economic welfare.</p> <p>3)</p> <p>a) it may reduce security of supply if real time countertrading is necessary to ensure availability of Balancing Reserve</p> <p>b) total procurement costs of Balancing Reserves will be unclear at the time of procurement</p>

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 Reserves and Balancing Energy issues and combine it with article 32 and also maybe include it into the procurement sections of Balancing Energy and Balancing Reserves. 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; 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	Restructure the article into Balancing Reserves and Balancing Energy issues and combine it with article 31 and also maybe include it into the procurement sections of Balancing Energy and Balancing Reserves. General content of the article should be kept.
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 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 Balancing Reserves need to be save and should not get lost in other timeframes (due to UIOLI; UIOSI) and Framework Guidelines allows reservation of CZC.

Article 34 – GENERAL SETTLEMENT PRINCIPLES

Summary	36 comments were received on this article. The major themes emerging are: <ul 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.
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	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 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 Transmission System Operators, 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"> 2) New definitions of Imbalance Price Area and Imbalance Area. 3) New article about delegation of functions. 4) Replace the term "reconciliation" with a proper sentences explaining its meaning.
Explanation for change or no change	<ol style="list-style-type: none"> 1) Still under legal review. 2) 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. 3) A new article about delegation of function has been introduced into the

	<p>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> <p>4) 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.</p> <p>5) Clarifications about the meaning of the term reconciliation have been provided.</p>
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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> <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 "Connection 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.

Article 37 – BALANCING ENERGY FROM FREQUENCY RESTORATION PROCESS

Summary	<p>11 comments were received on this article. The major themes emerging are:</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) 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 Transmission System Operators, 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."
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 Transmission System Operators, 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 "Connection TSO".

	<ul style="list-style-type: none"> 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	<ul 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) 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.

Article 39 – IMBALANCE ADJUSTMENT TO BALANCE RESPONSIBLE PARTY

Summary	<p>11 comments were received on this article. The major themes emerging are:</p> <ul 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 Transmission System Operators, but only for Imbalance Settlement.
Changes made	<ul 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	<ul 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 entrusted to control the balancing activation of each BSP is considered inappropriate, the consequences of the relation are considered a

	<p>market issue.</p> <ol style="list-style-type: none"> 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 Balance Responsible Parties 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 definitions in order to respect the regional specificities of each Member State. 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.
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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.
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Article 41 – INTENDED EXCHANGE OF ENERGY THROUGH IMBALANCE NETTING PROCESS

Summary	11 comments were received on this article. The major themes emerging are: 1) Imbalance Netting Process: Wrong reference to article 58 in 41.1 and no definition in article 2. 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
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	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: 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	1) Change. Unintentional Deviation Energy is no longer used 2) Change. NRA approval included in article 7(4)
Explanation for change or no change	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: 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	1) Change. 2) Change. Included in Article 9 on Delegation of Functions 3) No change
Explanation for change or no change	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	<p>32 comments were received on this article. The major themes emerging are:</p> <ol style="list-style-type: none"> 1) The CBA for harmonization 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 harmonized) 2) CBA for harmonization: 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) No change. 2) No change. 3) No change 4) Change
Explanation for change or no change	<ol style="list-style-type: none"> 1) The CBA shall be submitted at the latest 3 years after EIF but could be submitted earlier. 2) No reference to hypothesis to be taken into account in the CBA for harmonization: it will be tackled in the methodology. Not under the scope of settlement. 3) All time periods will be taken into account in the CBA to avoid an ex-ante decision 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>
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	<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 3) clarify value of avoided activation 4) Should also refer to other designated entities
Changes made	<ol 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	<ol style="list-style-type: none"> 1) The NC EB will not set out prescribe the use of ehtier 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 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 TRANSMISSION SYSTEM OPERATORS 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.
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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 needed
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: 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 needed in this article. Description of algorithm will be included in T&C, with requirement to publish and NRA approval
Explanation for change or no change	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: 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
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	<p>every 2 year)</p> <ol style="list-style-type: none"> 3) Shorter deadlines for preparing Annual report and indicators list 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 intermediate and the target model. 2) CMOL based on TSO-TSO model should be the starting point for developing the target model.
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	<ul style="list-style-type: none"> 3) Improve wording and clarity on the process how TSOs can modify the 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> <ul 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 harmonization, of which the cost-benefit analyses are a key component.
Changes made	<ul style="list-style-type: none"> 1) Change 2) Partly change 3) Change
Explanation for change or no change	<ul 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 intermediate and target model for RR, mFRR, aFRR, imbalance netting. 3) Wording improved. Target models are those already required by FWGL. 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 target 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:
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	<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	-