

# ENTSO-E Network Code on Electricity Balancing

23 December 2013

## *Notice*

This Network Code represents ENTSO-E final proposals, in line with ACER Framework Guidelines on Electricity Balancing published on 18 September 2012, developed after receiving the EC mandate letter on 21 December 2012. It reflects the comments received by ENTSO-E during the public consultation held between 17 June and 16 August 2013. Furthermore, it is based on the input received through extensive informal dialogue with stakeholders, as well as bilateral / trilateral meetings with ACER and the EC.

This document called “Network Code on Electricity Balancing” is submitted to the Agency for the Cooperation of Energy Regulators for its reasoned opinion to be provided pursuant to Article 6 of Regulation (EC) No 714/2009.

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC,

Having regard to Regulation (EC) No 713/2009 of the European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators (ACER),

Having regard to Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003 and especially Article 6,

Having regard to the priority list issued by the European Commission on 19 July 2012,

Having regard to the Framework Guideline on Electricity Balancing issued by the Agency for the Coordination of Energy Regulators on 18 September 2012,

Having regard to the 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,

Whereas:

- (1) Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC and Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 underline the need for an increased cooperation and coordination among Transmission System Operators, hereinafter TSOs, within a European Network of Transmission System Operators for Electricity, hereinafter ENTSO-E, to create Network Codes for providing and managing effective and transparent access to the transmission networks across borders, and to ensure coordinated and sufficiently forward-looking planning and sound technical evolution of the transmission system in the European Union, including the creation of interconnection capacities, with due regard to the environment.
- (2) TSOs are according to Article 2 and 12 of Directive 2009/72/EC responsible for operating, ensuring the maintenance of and, if necessary, developing the extra high-voltage and high-voltage interconnected system its interconnections with other systems, and for ensuring the long-term ability of the system to meet reasonable demands for the transmission of electricity and with a view to its delivery of electricity to final customers or to distributors.
- (3) As stated in Directive 2009/72/EC a well-functioning internal market in electricity should provide producers with the appropriate incentives for investing in new power generation, including in electricity from renewable energy sources, paying special attention to the most isolated countries and regions in the European Union's energy market. A well-functioning market should also provide consumers with adequate measures to promote the more efficient use of energy for which a secure supply of energy is a precondition.
- (4) The security of energy supply is an essential element of public security and is therefore inherently connected to the efficient functioning of the internal market in electricity and the integration of the isolated electricity markets of Member States. Electricity can reach the citizens of the Union only through the network. Functioning electricity markets and, in particular, the

networks and other assets associated with electricity supply are essential for public security, for the competitiveness of the economy and for the well-being of the citizens of the Union.

- (5) ENTSO-E has drafted this Network Code on Electricity Balancing aiming to set out clear and objective requirements for TSOs, National Regulatory Authorities, hereinafter NRAs, and Market Participants in order to contribute to non-discrimination, effective competition and the efficient functioning of the internal electricity market and to ensure operational security in particular for the rules for trading related to technical and operational provision of system Balancing and the Balancing rules including network-related power reserve rules.
- (6) This Network Code has been drafted in accordance with the Article 8(7) of Regulation (EC) N°714/2009 according to which the Network Codes shall be developed for cross-border issues and market integration issues and shall be without prejudice to the right of Member States to establish national network codes which do not affect cross-border trade.
- (7) This Network Code has the objective of 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.
- (8) TSOs shall be responsible for organising European Balancing Markets and shall strive for their integration, keeping the system in balance in the most efficient manner. To do so, they shall work in close cooperation and shall coordinate their activities as much as necessary.
- (9) Establishing a cooperation within Coordinated Balancing Areas and developing a framework for the development of the terms and conditions related to Balancing all TSOs shall take into account the regional specificities of different electricity market designs and in particular shall take into account the parallel existence of Central Dispatch systems and Self Dispatch systems of European electricity markets.
- (10) The requirements of the Network Code on Load-Frequency Control and Reserves, especially regarding the functions and responsibilities established, or to be established as a consequence of the cooperation within a Coordinated Balancing Area, shall apply to all concerned TSOs.
- (11) In fulfilling the requirements of this Network Code, TSOs and NRAs shall use reasonable endeavours to exploit synergies and draw on experience gained through existing Balancing cooperation projects which have commenced, have concluded or are on-going at the date of the entry into force of this Network Code.
- (12) TSOs shall use best endeavours to facilitate the Exchange of Balancing Energy within a Coordinated Balancing Area. Each Balancing Service Provider intending to provide Balancing Capacity or Balancing Energy needs to successfully pass the concerned pre-qualification stage defined by the Connecting TSOs terms and conditions related to Balancing.
- (13) The pricing method used in the procurement of Balancing Capacity shall strive for an economically efficient use of Demand Side Response and other Balancing resources subject to Operational Security limits.
- (14) The pricing methods for each Standard Product for Balancing Energy shall strive for an economically efficient use of Demand Side Response and other Balancing resources subject to Operational Security limits.

HAS ADOPTED THIS NETWORK CODE:

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# CHAPTER 1

## GENERAL PROVISIONS

### Article 1

#### SUBJECT MATTER AND SCOPE

1. This Network Code establishes common rules for Electricity Balancing including the establishment of common principles for procurement and settlement of Frequency Containment Reserves, Frequency Restoration Reserves and Replacement Reserves and common methodology for the activation of Frequency Restoration Reserves and Replacement Reserves.
2. The requirements set forth by this Network Code shall apply in particular to TSOs, NRAs, the Agency, Distribution System Operators, hereinafter DSOs, third parties to whom responsibilities have been delegated, where applicable, and Market Participants.
3. In Member States where more than one TSO exists, this Network Code shall apply to all TSOs within that Member State. Where a TSO does not have a function relevant to one or some obligations under this Network Code, Member States may under the national regulatory regime provide that the responsibility to comply with one or some obligations under this Network Code is assigned to one or more different TSOs. In case of such assignment, the Network Code shall apply accordingly to the TSOs to which responsibilities have been assigned.
4. This Network Code shall apply to Normal State and Alert State, as defined in *[Article 8 System States]* of the Network Code on Operational Security. However, in case of Alert State Article 35(6), Article 40(4), Article 40(7), Article 40(8) and Article 40(9) of this Network Code shall not apply.

### Article 2

#### DEFINITIONS

For the purpose of this Network Code, the definitions contained in Article 2 of Regulation (EC) No 714/2009, Commission Regulations establishing Network Codes that have been adopted according to Article 6(11) of Regulation (EC) No 714/2009, the definitions contained in Article 2 of Regulation (EU) No 543/2013 as well as those of Article 2 of directive 2009/72/EC shall apply. In addition, the following definitions shall apply:

**Activation Optimisation Function** means the role to operate the algorithm applied for the optimisation of the activation of Balancing Energy bids within a Coordinated Balancing Area.

**Allocated Volume** means an energy volume physically injected or withdrawn from the system and attributed to a Balance Responsible Party, for the calculation of the Imbalance of that Balance Responsible Party.

**Balance Responsible Party** means a market-related entity or its chosen representative responsible for its Imbalances.

**Balancing** means all actions and processes, on all timelines, through which TSOs ensure, in a continuous way, to maintain the system frequency within a predefined stability range as set



forth in *[Article 19 Frequency Quality Target Parameters]* of the Network Code on Load-Frequency Control and Reserves, and to comply with the amount of reserves needed per Frequency Containment Process, Frequency Restoration Process and Reserve Replacement Process with respect to the required quality, as set forth in *[Chapter 6 Frequency Containment Reserves, Chapter 7 Frequency Restorations Reserves and Chapter 8 Replacement Reserves]* of the Network Code on Load-Frequency Control and Reserves.

**Balancing Capacity** means the contracted Reserve Capacity.

**Balancing Energy** means energy used by TSOs to perform Balancing.

**Balancing Energy Gate Closure Time** means the point in time when submission or update of a Balancing Energy bid for a Standard Product on a Common Merit Order List in a Coordinated Balancing Area is no longer permitted.

**Balancing Market** means the entirety of institutional, commercial and operational arrangements that establish market-based management of the function of Balancing within the framework of the European Network Codes.

**Balancing Services** means either or both Balancing Capacity and Balancing Energy.

**Balancing Service Provider** means a Market Participant providing Balancing Services to its Connecting TSO, or in case of the TSO-BSP Model, to its Contracting TSO.

**Capacity Procurement Optimisation Function** means the role to operate the algorithm applied for the optimisation of the procurement of Balancing Capacity within a Coordinated Balancing Area in which Balancing Capacity is exchanged.

**Central Dispatch** means a scheduling and dispatch arrangement in a Responsibility Area where the TSO performs the Integrated Scheduling Process; and where the TSO issues dispatch instructions directly to the dispatchable Power Generating Facilities and Demand Facilities.

**Common Merit Order List** means a list of Balancing Energy bids sorted in order of their bid prices, used for the activation of Balancing Energy bids within a Coordinated Balancing Area.

**Connecting TSO** means the TSO which operates the Responsibility Area in which Balancing Service Providers and Balance Responsible Parties shall be compliant with the terms and conditions related to Balancing.

**Contracting TSO** means in case of the TSO-BSP Model the TSO which has contractual arrangements with a Balancing Service Provider in another Responsibility Area or Scheduling Area when appropriate.

**Coordinated Balancing Area** means a cooperation with respect to the Exchange of Balancing Services, Sharing of Reserves or operating the Imbalance Netting Process between two or more TSOs.

**Deactivation Period** means the time period for ramping, from full delivery or withdrawal back to a set point.

**Delivery Period** means a time period of delivery during which the Balancing Service Provider delivers the full requested change of power in-feed or withdrawals to the system.

**Divisibility** means the possibility for the TSO to use only part of the Balancing Energy bids or Balancing Capacity bids offered by the Balancing Service Provider, either in terms of power activation or time duration.

**Exchange of Balancing Capacity** means the process of procuring Balancing Capacity by a TSO in a different Responsibility Area or Scheduling Area when appropriate than the one in which the procured Balancing Service Provider is connected.

**Exchange of Balancing Energy** means the process of instructing the activation of Balancing Energy bids for the delivery of Balancing Energy by a TSO in a different Responsibility Area or Scheduling Area when appropriate, than the one in which the activated Balancing Service Provider is connected.

**Exchange of Balancing Services** means either or both Exchange of Balancing Capacity and Exchange of Balancing Energy.

**Full Activation Time** means the time period between the activation request by TSO and the corresponding full activation of the concerned product.

**Imbalance** means an energy volume calculated for a Balance Responsible Party and representing the difference between the Allocated Volume attributed to that Balance Responsible Party, and the final Position of that Balance Responsible Party and any Imbalance Adjustment applied to that Balance Responsible Party, within a given Imbalance Settlement Period.

**Imbalance Adjustment** means an energy volume representing the Balancing Energy from a Balancing Service Provider and applied by the Connecting TSO for an Imbalance Settlement Period to the concerned Balance Responsible Parties, for the calculation of the Imbalance of these Balance Responsible Parties.

**Imbalance Area** means the Imbalance Price Area or a part of an Imbalance Price Area, for the calculation of an Imbalance.

**Imbalance Netting Process Function** means the role to operate the algorithm applied for operating the Imbalance Netting Process between two or more Responsibility Areas or Scheduling Areas when appropriate.

**Imbalance Price** means the price in each Imbalance Settlement Period for an Imbalance in each direction.

**Imbalance Price Area** means either a Bidding Zone, part of a Bidding Zone or a combination of several Bidding Zones, to be defined by each TSO, for the purpose of calculation of Imbalance Prices.

**Imbalance Settlement** means a financial settlement mechanism aiming at charging or paying Balance Responsible Parties for their Imbalances.

**Imbalance Settlement Period** means time units for which Balance Responsible Parties' Imbalance is calculated.

**Integrated Scheduling Process Gate Closure Time** means the point in time when the submission or update of Integrated Scheduling Process bids submitted for use in the Integrated Scheduling Process is no longer permitted.

**Integrated Scheduling Process** means a continual process that uses at least Integrated Scheduling Process bids which contain commercial data, technical data of each Power Generating Facilities or Demand Facilities required for this process, the latest Responsibility Area Adequacy analysis, and the Operational Security Limits as an input to the process; which then simultaneously optimises reserve procurement, congestion management and Balancing Energy procurement over a set time horizon in order to produce an indicative Active Power output schedule for the dispatchable resources in order to ensure Operational Security.

**Mode of Activation** means the implementation of activation of Balancing Energy bids, manual or automatic, depending on whether Balancing Energy is triggered manually by an operator or automatically by means of a closed-loop regulator.

**Position** means an energy volume representing the sum of scheduled commercial transactions of a Balance Responsible Party, on organised electricity markets or between Balance Responsible Parties, for the calculation of the Imbalance, or, where appropriate, means an energy volume representing scheduled injections, scheduled withdrawals or the sum of scheduled injections and withdrawals of a Balance Responsible Party, for the calculation of the Imbalance of that Balance Responsible Party.

**Preparation Period** means the time duration between the request by the TSO and start of the energy delivery.

**Probabilistic Approach** means calculated probabilities for the availability of Cross Zonal Capacities.

**Requesting TSO** means the TSO that requests Balancing Energy.

**Self Dispatch** means a scheduling and dispatch arrangement in a Responsibility Area where the schedule of all generation units and Demand Side Response is determined by the units owners.

**Specific Product** means a product different from a Standard Product.

**Standard Product** means a harmonised Balancing product defined by all TSOs for the Exchange of Balancing Services.

**Transfer of Balancing Capacity** means a Transfer of Balancing Capacity from the initially contracted Balancing Service Provider to another transfer receiving Balancing Service Provider.

**Transfer of Balancing Capacity Function** means the role to operate the algorithm applied for the optimisation of the Transfer of Balancing Capacity.

**TSO Energy Bid Submission Gate Closure Time** means the point in time where a Connecting TSO forwards the Balancing Energy bids received from a Balancing Service Provider to the Activation Optimisation Function. The TSO Energy Bid Submission Gate Closure Time is after Balancing Energy Gate Closure Time.

**TSO-BSP Model** means a model for the Exchange of Balancing Capacity or the Exchange of Balancing Energy where the Contracting TSO has an agreement with a Balancing Service Provider in another Responsibility Area or Scheduling Area when appropriate.

**TSO-TSO Model** means a model for the Exchange of Balancing Services exclusively by TSOs. The TSO-TSO Model is the standard model for the Exchange of Balancing Services.

**TSO-TSO Model for FRR and RR** means a model for the Exchange of Balancing Capacity of Frequency Restoration Reserves and Replacement Reserves exclusively by TSOs.

**TSO-TSO Settlement Function** means the role to perform the settlement of cooperation processes between the TSOs of a Coordinated Balancing Area.

**Validity Period** means the time period when the Balancing Energy bid offered by the Balancing Service Provider can be activated, whereas all the characteristics of the product are respected. The Validity Period is defined by a beginning time and an ending time.

### **Article 3 RECOVERY OF COSTS**

1. The costs related to the obligations referred to in this Network Code which have to be borne by regulated Network Operators shall be assessed by NRAs.
2. Costs assessed as efficient, reasonable and proportionate shall be recovered as determined by NRAs.
3. If requested to do so by NRAs, regulated Network Operators shall, within three months of such a request, use best endeavours to provide such additional information as reasonably requested by NRAs to facilitate the assessment of the costs incurred.

**Article 4**  
**CONFIDENTIALITY OBLIGATIONS**

1. All addressees of this regulation as well as their delegated third parties if any shall preserve the confidentiality of the commercially sensitive information and data submitted to them in the fulfilment of the obligations arising from this Network Code.
2. Without prejudice to the obligation to preserve the confidentiality of commercially sensitive information obtained in the course of carrying out its activities, each TSO shall provide the other TSO(s) of the Coordinated Balancing Area sufficient information to ensure secure and efficient operation.

**Article 5**  
**CONSULTATION**

1. The TSOs responsible for submitting proposals for implementing measures pursuant to this Network Code shall consult on a draft proposal for a period of not less than four weeks.
2. At least the following proposals shall be subject to consultation:
  - (a) the criteria and methodology for Cost-Benefit Analysis pursuant to Article 13(2), Article 15(2), Article 17(2) and Article 19(2);
  - (b) the modifications of the European integration models pursuant to Article 13(2), Article 15(2), Article 17(2) and Article 19(2);
  - (c) the terms and conditions related to Balancing pursuant to Article 26;
  - (d) the Standard Products pursuant to Article 28;
  - (e) the criteria and methodology for Cost-Benefit Analysis pursuant to Article 37;
  - (f) the transitional procurement of Balancing Capacity for Frequency Restoration Reserves and Replacement Reserves in the form of a TSO-BSP Model pursuant to Article 37;
  - (g) the common pricing method for Standard Products for Balancing Energy pursuant to Article 38;
  - (h) the methodology for the calculation of unshared bids pursuant to Article 39(10);
  - (i) the methodology for a co-optimisation process for Cross Zonal Capacity to enable the Exchange of Balancing Capacity or Sharing of Reserves pursuant to Article 43;
  - (j) the methodology for a market-based reservation of Cross Zonal Capacity to enable the Exchange of Balancing Capacity or Sharing of Reserves pursuant to Article 44;
  - (k) the reservation of Cross Zonal Capacity based on economic efficiency analyses, pursuant to Article 45;
  - (l) the criteria and methodology for Cost-Benefit Analysis pursuant to Article 58(1) and Article 58(4); the modifications of the Imbalance Settlement Period pursuant to Article 58(1);
  - (m) an Imbalance Settlement Period deviating from the decision pursuant to Article 58(4); and
  - (n) the principles for the algorithms to be applied pursuant to Article 65.
3. The views of stakeholders emerging from the consultations undertaken pursuant to paragraph 2 shall be duly considered by the TSOs to whom the obligation to consult is addressed prior to the submission of the documents for regulatory approval, if required, or prior to publication in all other cases. In all cases, a clear and robust justification of the reasons for including or not including the views emerging from the consultation in the submission shall be developed and published in a timely manner.

**Article 6**  
**REGULATORY APPROVALS**

1. The items specified in paragraphs 2 to 6 shall be treated in a manner consistent with Article 37 of Directive 2009/72/EC.
2. The following proposals shall be subject to approval by all NRAs:
  - (a) the implementation frameworks for the regional integration models and for the European integration models pursuant to Article 12(2), Article 13(3), Article 14(2), Article 15(3), Article 16(2), Article 17(3), Article 18(2), and Article 19(3);
  - (b) the modifications of the European integration models pursuant to Article 13(2), Article 15(2), Article 17(2) and Article 19(2);
  - (c) the criteria and methodology for Cost-Benefit Analysis pursuant to Article 13(2), Article 15(2), Article 17(2) and Article 19(2);
  - (d) the Standard Products pursuant to Article 28(2) and Article 28(3);
  - (e) the criteria and methodology for Cost-Benefit Analysis pursuant to Article 37;
  - (f) the common pricing method of Standard Products for Balancing Energy pursuant to Article 38(2) and Article 38(3);
  - (g) the TSO-TSO settlement rules for the intended exchange of energy pursuant to Article 56(1);
  - (h) the TSO-TSO settlement rules for the unintended exchange of energy pursuant to Article 57(1);
  - (i) the criteria and methodology for Cost-Benefit Analysis pursuant to Article 58(1) and Article 58(4); and
  - (j) the modifications of the Imbalance Settlement Period pursuant to Article 58(1).
3. The following proposal shall be subject to approval by all NRAs having jurisdiction over a concerned Synchronous Area:
  - a) the TSO-TSO settlement rules for the intended exchange of energy pursuant to Article 56(3).
4. The following proposals shall be subject to approval by all NRAs having jurisdiction over a Responsibility Area that forms part of the concerned Coordinated Balancing Area:
  - a) the common proposal for a Coordinated Balancing Area pursuant to Article 10(4);
  - b) the amendments to the implementation frameworks pursuant to Article 12(4), Article 13(5), Article 14(4), Article 15(5), Article 16(4), Article 17(5), Article 18(4) and Article 19(5);
  - c) the procurement of Balancing Capacity longer than one month and more than one month in advance of the provision of the Balancing Capacity pursuant to Article 35(8);
  - d) any procurement process linking upward and downward Balancing Capacity pursuant to Article 35(10);
  - e) the methodology for calculations of Cross Zonal Capacity for the Exchange of Balancing Energy or operating the Imbalance Netting Process other than using the available Cross Zonal Capacity after Intraday Cross Zonal Gate Closure Time pursuant to Article 48(3); and
  - f) the pricing method for Cross Zonal Capacity for the Exchange of Balancing Energy or operating the Imbalance Netting Process pursuant to Article 49(2).
5. The following proposals shall be subject to approval by all NRAs having jurisdiction over a concerned Responsibility Area:
  - a) the request for exemption in the form of a TSO-BSP Model pursuant to Article 37;

- b) the reservation of Cross Zonal Capacity based on economic efficiency analyses, pursuant to Article 45;
  - c) the TSO-TSO settlement rules for the intended exchange of energy pursuant to Article 56(4); and
  - d) the TSO-TSO settlement rules for the unintended exchange of energy pursuant to Article 57(2).
6. The following proposals shall be subject to approval by the NRAs of each concerned Member State on a case-by-case basis:
- a) to allow TSOs to offer Balancing Services themselves pursuant to Article 21;
  - b) the terms and conditions related to Balancing pursuant to Article 26(1) and Article 26(10);
  - c) the definition and use of Specific Products pursuant to Article 28(7) and Article 28(8);
  - d) rules for Integrated Scheduling Process bids modification in Central Dispatch systems pursuant to Article 30;
  - e) the procurement of Balancing Capacity longer than one year and more than one year in advance of the provision of the Balancing Capacity pursuant to Article 33(1);
  - f) procurement process linking upward and downward Balancing Capacity pursuant to Article 33(5);
  - g) the methodology for the calculation of unshared bids pursuant to Article 39(10);
  - h) the charges for losses, pursuant to Article 49;
  - i) an Imbalance Settlement Period deviating from the decision pursuant to Article 58(4);
  - j) the derogation in respect of one or more provisions of this Network Code pursuant to Article 70; and
  - k) if applicable, the financial outcome as a result of the settlement pursuant to Article 50(3).
7. For each of the approvals pursuant to paragraphs 2 to 6, TSOs shall, prior to the expiry of the deadline submit those proposals to the concerned NRAs for approval. All submissions shall include a proposed timeline for implementation.
8. TSOs shall use reasonable endeavours to facilitate the consideration of issues at the same point of time.
9. NRAs shall, after having received a proposal pursuant to paragraphs 1 to 6, provide TSOs with an approval or request to amend the proposal within:
- a) three months after having received a proposal if the approval process concerns only one NRA; and
  - b) six months after having received a proposal if the approval process concerns more than one NRA.
10. NRAs shall inform the Agency of the opening and outcome of any approval procedures under this Network Code.
11. In the event that the concerned NRAs request an amendment to a proposal pursuant to paragraphs 1 to 6, TSOs shall resubmit an amended proposal for approval within three months. Where the concerned NRAs have not been able to reach a decision in accordance with paragraph 9, the NRAs shall inform the Agency. The Agency shall decide upon those regulatory issues that fall within the competence of NRAs as specified under Article 8 of Regulation (EC) No 713/2009.
12. TSOs shall implement the decision of NRAs no later than at the date specified in the decision.

**Article 7**  
**PUBLICATION OF INFORMATION**

1. The items consulted upon according to Article 5(1) shall be made publically available after their approval, if regulatory approval is required, or after finalisation in all other cases by the TSO to whom the obligation is addressed.
2. All entities referred to in Article 1(2) shall ensure that information is published at a time and in a format which does not create an actual or potential competitive advantage or disadvantage to any individual or category of individuals.
3. Each TSO shall publish the following information:
  - a) the terms and conditions related to Balancing pursuant to Article 26 at least one week before the application;
  - b) the details of reserved Cross Zonal Capacity to enable the Exchange of Balancing Capacity or Sharing of Reserves pursuant to Article 41. This information shall include the volumes reserved, the time period of the reservation and the market value calculated in accordance with Article 42 at the latest 24 hours after the reservation;
  - c) the approved methodologies pursuant to Article 43 to Article 45 at least one month before the application;
  - d) the description of the requirements of any algorithm developed and amendments to it, pursuant to Article 65 at least one month before the application;
  - e) the common annual report pursuant to Article 67;
  - f) the volumes and prices of all Balancing Energy bids for Standard Products, anonymised and aggregated if required to protect confidentiality no later than one hour after the procurement process ends; and
  - g) the volume of unshared bids pursuant to Article 39.
4. Each TSO shall publish the following information on Specific Products:
  - a) the procured volumes of Specific Products no later than one hour after the procurement process ends; and
  - b) the activated volumes of Specific Products no later than one hour after the ending time of the Validity Period.
5. The obligations specified in paragraphs 1 to 4 are without prejudice to the obligations of ENTSO-E to publish the information on the central information transparency platform, established pursuant to Article 3, of 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, or on a public website.

**Article 8**  
**DELEGATION OF FUNCTIONS**

1. Each TSO may delegate all or part of any function assigned to them under this Network Code to one or more third parties. The delegating TSO shall remain responsible for ensuring compliance with the obligations under this Network Code, including ensuring access for information necessary for monitoring by the NRA.



2. In all cases a third party shall clearly demonstrated its ability to fulfil each of the obligations of this Network Code to the satisfaction of the delegating TSO, prior to delegation.
3. In the event that all or part of any function specified in this Network Code is delegated to a third party, the delegating TSO shall ensure that suitable confidentiality agreements have been put in place prior to delegation.

## **CHAPTER 2**

### **THE ELECTRICITY BALANCING SYSTEM**

#### **SECTION 1**

#### **PRINCIPLES OF THE BALANCING MARKET**

#### **Article 9**

#### **GENERAL OBJECTIVES OF THE BALANCING MARKET**

1. This Network Code shall facilitate the achievement of the following objectives:
  - (a) enhancing pan-European Social Welfare;
  - (b) ensuring Operational Security;
  - (c) contributing to the efficient long-term operation and development of the European electricity Transmission System and electricity sector;
  - (d) fostering effective competition, non-discrimination and transparency in Balancing Markets;
  - (e) facilitating the efficient functioning and preventing undue distortion of other electricity markets in timeframes different from the Balancing Markets;
  - (f) ensuring that the procurement of Balancing Services is fair, objective, transparent and market-based, avoids undue barriers to entry for new entrants, in particular by enabling a Balancing Service Provider to act independently of a Balance Responsible Party, while mitigating cost and risks for both parties, fosters the liquidity of Balancing Markets while preventing undue distortions from within the internal market in electricity;
  - (g) promoting the Exchange of Balancing Services;
  - (h) facilitating the participation of Demand Side Response including aggregation facilities and energy storage; and
  - (i) facilitating the participation of renewable energy sources and support the achievement of the European Union target for the penetration of renewable generation.

**Article 10**  
**CREATION OF COORDINATED BALANCING AREAS**

1. Each TSO shall form a Coordinated Balancing Area with one or more TSO operating in a different Member State pursuant to CHAPTER 2 SECTION 2 to SECTION 5.
2. All TSOs of a Coordinated Balancing Area shall use the Exchange of Balancing Energy from at least one Standard Product or operating the Imbalance Netting Process.
3. TSOs shall cooperate when establishing Coordinated Balancing Areas and shall not prevent any other TSO from fulfilling its obligations under this Network Code.
4. All TSOs of a Coordinated Balancing Area shall develop a common proposal for a Coordinated Balancing Area, detailing:
  - (a) the framework for the establishment of the terms and conditions related to Balancing pursuant to Article 26;
  - (b) the Balancing Energy Gate Closure Time for each Standard Product for Balancing Energy pursuant Article 31;
  - (c) the TSO Energy Bid Submission Gate Closure Time pursuant to Article 39(11);
  - (d) the minimum available volumes of Balancing Energy bids of concerned products required to be compliant with *[Article 43 FCR Dimensioning, Article 46 FRR Dimensioning and Article 48 RR Dimensioning]* of the Network Code on Load-Frequency Control and Reserves;
  - (e) the Common Merit Order Lists to be organised by the common Activation Optimisation Function pursuant to Article 40;
  - (f) the principles for the algorithms to be applied pursuant to Article 65;
  - (g) if applicable, the framework for the Exchange of Balancing Services with other Coordinated Balancing Areas;
  - (h) if applicable, the proposal of the common pricing method for Balancing Capacity pursuant to Article 35;
  - (i) if applicable, all requirements and rules including the approval process for the Transfer of Balancing Capacity pursuant to Article 36;
  - (j) if applicable, the change proposal of the common pricing method of Standard Products for Balancing Energy pursuant to Article 38;
  - (k) if applicable, the activation of Balancing Energy bids for purposes other than Balancing pursuant to Article 39; and
  - (l) if applicable, the methodology to ensure availability of Cross Zonal Capacity pursuant to Article 43 and Article 44.
5. The framework to be developed pursuant to paragraph 4(a) shall define harmonised principles for the terms and conditions related to Balancing and shall ensure a sufficient level of a coordination between all TSOs of the Coordinated Balancing Area in order to facilitate the achievement of the objectives of the Balancing Market as defined in Article 9 as well as reaching the targets defined in CHAPTER 2.
6. For a Standard Product the Coordinated Balancing Area established for the Exchange of Balancing Energy shall be consistent with the Coordinated Balancing Area established for the Exchange of Balancing Capacity.
7. All TSOs of two or more interconnected Coordinated Balancing Areas shall have the right to make use of the Exchange of Balancing Services and the Sharing of Reserves between these

Coordinated Balancing Areas, which are already exchanged within these Coordinated Balancing Areas.

#### **Article 11**

#### **EXTENSION AND MERGING OF COORDINATED BALANCING AREAS**

1. All TSOs shall cooperate in promoting the extension and merging of Coordinated Balancing Areas in order to achieve the regional integration models and European integration models.
2. Each TSO shall report to the Agency as soon as incompatibilities between the actual developments within a Coordinated Balancing Areas and the developments foreseen in the regional integration model or the European integration model in accordance with CHAPTER 2 SECTION 2 to SECTION 5 are identified.
3. The extension of a Coordinated Balancing Area regarding the participating TSOs or the Standard Products exchanged or shared shall follow the process described in Article 10(4).
4. The merging of Coordinated Balancing Areas shall follow the process described in Article 10(4). Where two or more Coordinated Balancing Areas for a Standard Product or operating the Imbalance Netting Process merge, the result shall have the form of a single Coordinated Balancing Area replacing the previous ones.

#### **SECTION 2**

#### **MODELS FOR THE EXCHANGE OF BALANCING ENERGY FOR REPLACEMENT RESERVES**

#### **Article 12**

#### **REGIONAL INTEGRATION MODEL FOR REPLACEMENT RESERVES**

1. The regional integration model for the Exchange of Balancing Energy for Replacement Reserves shall be based on:
  - (a) a multilateral TSO-TSO Model with Common Merit Order Lists;
  - (b) more than one Coordinated Balancing Area pursuant to Article 11; and
  - (c) sharing and exchanging of all Balancing Energy bids for Replacement Reserves pursuant to Article 28, except for unshared bids pursuant to Article 39(10).
2. No later than six months after the entry into force of this Network Code, all TSOs shall commonly develop a proposal for an implementation framework to implement the regional integration model for the Exchange of Balancing Energy for Replacement Reserves.
3. The implementation framework pursuant to paragraph 2 shall include:
  - (a) a list of TSOs to whom the implementation of the regional integration model for the Exchange of Balancing Energy for Replacement Reserves applies;
  - (b) a configuration of the Coordinated Balancing Areas for the implementation of the regional integration model for the Exchange of Balancing Energy for Replacement Reserves;
  - (c) implementation timeline of the regional integration model for the Exchange of Balancing Energy for Replacement Reserves; and
  - (d) high-level principles for algorithms and methodologies used.

4. All TSOs shall have the right to propose amendments to the implementation framework pursuant to paragraph 3 during the implementation of the regional integration model for the Exchange of Balancing Energy for Replacement Reserves.
5. No later than two years and six months after the entry into force of this Network Code, TSOs pursuant to paragraph 3(a) shall establish Coordinated Balancing Areas pursuant to paragraph 3(b) and implement the regional integration model for the Exchange of Balancing Energy for Replacement Reserves.

### **Article 13**

#### **EUROPEAN INTEGRATION MODEL FOR REPLACEMENT RESERVES**

1. The European integration model for the Exchange of Balancing Energy for Replacement Reserves shall be based on:
  - (a) a multilateral TSO-TSO Model with Common Merit Order Lists;
  - (b) one Coordinated Balancing Area; and
  - (c) sharing and exchanging of all Balancing Energy bids for Replacement Reserves pursuant to Article 28.
2. No later than four years after the entry into force of this Network Code, all TSOs shall have the right to commonly develop a proposal for modification of the European integration model for the Exchange of Balancing Energy for Replacement Reserves. The proposal shall be supported by a Cost-Benefit Analysis performed by all TSOs.
3. No later than five years after the entry into force of this Network Code, all TSOs shall commonly develop a proposal for an implementation framework to implement the European integration for the Exchange of Balancing Energy for Replacement Reserves.
4. The implementation framework pursuant paragraph 3 shall include:
  - (a) a list of TSOs to whom the implementation of the European integration model for the Exchange of Balancing Energy for Replacement Reserves applies;
  - (b) a configuration of the Coordinated Balancing Areas for the implementation of the European integration model for the Exchange of Balancing Energy for Replacement Reserves;
  - (c) implementation timeline of the European integration model; and
  - (d) high-level principles for algorithms and methodologies used.
5. All TSOs shall have the right to propose amendments to the implementation framework pursuant to paragraph 4 during the implementation of the European integration model for the Exchange of Balancing Energy for Replacement Reserves.
6. TSOs pursuant to paragraph 4(a) shall establish Coordinated Balancing Areas pursuant to paragraph 4(b) and shall implement the European integration model for the Exchange of Balancing Energy for Replacement Reserves by the time pursuant to paragraph 4(c).

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

**Article 14**  
**REGIONAL INTEGRATION MODEL FOR FREQUENCY RESTORATION RESERVES WITH  
MANUAL ACTIVATION**

1. The regional integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation shall be based on:
  - (a) a multilateral TSO-TSO Model with Common Merit Order Lists;
  - (b) more than one Coordinated Balancing Area; and
  - (c) sharing and exchanging of all Balancing Energy bids for Frequency Restoration Reserves with manual activation pursuant to Article 28, except unshared bids pursuant to Article 39(10).
2. No later than two years after the entry into force of this Network Code, all TSOs commonly develop a proposal for an implementation framework to implement the regional integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation.
3. The implementation framework pursuant to paragraph 2 shall include:
  - (a) a list of TSOs to whom the implementation of the regional integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation applies;
  - (b) a configuration of the Coordinated Balancing Areas for the implementation of the regional integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation;
  - (c) implementation timeline of the regional integration model; and
  - (d) high-level principles for algorithms and methodologies used.
4. All TSOs shall have the right to propose amendments to the implementation framework pursuant to paragraph 3 during the implementation of the regional integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation.
5. No later than four years after the entry into force of this Network Code, TSOs pursuant to paragraph 3(a) shall establish Coordinated Balancing Areas pursuant to paragraph 3(b) and implement the regional integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation.

**Article 15**  
**EUROPEAN INTEGRATION MODEL FOR FREQUENCY RESTORATION RESERVES WITH  
MANUAL ACTIVATION**

1. The European integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation shall be based on:
  - (a) a multilateral TSO-TSO Model with Common Merit Order Lists;
  - (b) one Coordinated Balancing Area; and
  - (c) sharing and exchanging of all Balancing Energy bids for Frequency Restoration Reserves with manual activation pursuant to Article 28.

2. No later than four years after the entry into force of this Network Code, all TSOs shall have the right to commonly develop a proposal for modification of the European integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation. The proposal shall be supported by a Cost-Benefit Analysis performed by all TSOs.
3. No later than five years after the entry into force of this Network Code, all TSOs shall commonly develop a proposal for an implementation framework to implement the European integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation.
4. The implementation framework pursuant to paragraph 3 shall include:
  - (a) a list of TSOs to whom the implementation of the European integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation applies;
  - (b) a configuration of the Coordinated Balancing Areas for the implementation of the European integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation;
  - (c) implementation timeline of the European integration model; and
  - (d) high-level principles for algorithms and methodologies used.
5. All TSOs shall have the right to propose amendments to the implementation framework, pursuant to paragraph 4, during the implementation of the European integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation.
6. TSOs pursuant to paragraph 4(a) shall establish Coordinated Balancing Areas pursuant to paragraph 4(b) and shall implement the European integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with manual activation by the time pursuant to paragraph 4(c).

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

**Article 16**  
**REGIONAL INTEGRATION MODEL FOR FREQUENCY RESTORATION RESERVES WITH  
AUTOMATIC ACTIVATION**

1. The regional integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with automatic activation shall be based on:
  - (a) a coordinated activation of Frequency Restoration Reserves with automatic activation between TSOs based on TSO-TSO Model; and
  - (b) more than one Coordinated Balancing Area.
2. No later than three years after the entry into force of this Network Code, all TSOs shall commonly develop a proposal for an implementation framework to implement the regional integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with automatic activation.
3. The implementation framework pursuant to paragraph 2 shall include:
  - (a) a list of TSOs to whom the implementation of the regional integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with automatic activation applies;

- (b) a configuration of the Coordinated Balancing Areas for the implementation of the regional integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with automatic activation;
  - (c) implementation timeline of the regional integration model; and
  - (d) high-level principles for algorithms and methodologies used.
4. All TSOs shall have the right to propose amendments to the implementation framework pursuant to paragraph 3 during the implementation of the regional integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with automatic activation.
  5. No later than four years after the entry into force of this Network Code, TSOs pursuant to paragraph 3(a) shall implement the regional integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with automatic activation.

#### **Article 17**

#### **EUROPEAN INTEGRATION MODEL FOR FREQUENCY RESTORATION RESERVES WITH AUTOMATIC ACTIVATION**

1. The European integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with automatic activation shall be based on:
  - (a) a multilateral TSO-TSO Model respecting the principles of a Common Merit Order List;
  - (b) one Coordinated Balancing Area; and
  - (c) sharing and exchanging of all Balancing Energy bids for Frequency Restoration Reserves with automatic activation pursuant to Article 28.
2. No later than four years after the entry into force of this Network Code, all TSOs shall have the right to commonly develop a proposal for modification of the European integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with automatic activation. The proposal shall be supported by a Cost-Benefit Analysis performed by all TSOs.
3. No later than five years after the entry into force of this Network Code, all TSOs shall commonly develop a proposal for an implementation framework to implement the European integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with automatic activation.
4. The implementation framework pursuant paragraph 3 shall include:
  - (a) a list of TSO to whom the implementation of the European integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with automatic activation applies;
  - (b) a configuration of the Coordinated Balancing Areas for the implementation of the European integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with automatic activation;
  - (c) implementation timeline of the European integration model; and
  - (d) high-level principles for algorithms and methodologies used.
5. All TSOs shall have the right to propose amendments to the implementation framework pursuant to paragraph 4 during the implementation of the European integration model for the Exchange of Balancing Energy for Frequency Restoration Reserves with automatic activation.
6. All TSOs pursuant to paragraph 4(a) shall establish Coordinated Balancing Areas pursuant to paragraph 4(b) and shall implement the European integration model for the Exchange of



Balancing Energy for Frequency Restoration Reserves with automatic activation by the time pursuant to paragraph 4(c).

**SECTION 5**  
**MODELS FOR IMBALANCE NETTING PROCESS**

**Article 18**  
**REGIONAL INTEGRATION MODEL FOR IMBALANCE NETTING PROCESS**

1. The regional integration model for operating the Imbalance Netting Process shall be based on:
  - (a) a TSO-TSO Model; and
  - (b) more than one Coordinated Balancing Area.
2. No later than six months after the entry into force of this Network Code, all TSOs shall commonly develop a proposal for an implementation framework to implement the regional integration model Imbalance Netting Process.
3. The implementation framework pursuant to paragraph 2 shall include:
  - (a) a list of TSOs to whom the implementation of the regional integration model for Imbalance Netting Process applies;
  - (b) a configuration of the Coordinated Balancing Areas for the implementation of the regional integration model Imbalance Netting Process;
  - (c) implementation timeline of the regional integration model; and
  - (d) high-level principles for algorithms and methodologies used.
4. All TSOs shall have the right to propose amendments to the implementation framework pursuant to paragraph 3 during the implementation of the regional integration model for the Imbalance Netting Process.
5. No later than two years after the entry into force of this Network Code, TSOs pursuant to paragraph 3(a) shall establish Coordinated Balancing Areas pursuant to paragraph 3(b) and implement the regional integration model for the Imbalance Netting Process.

**Article 19**  
**EUROPEAN INTEGRATION MODEL FOR IMBALANCE NETTING PROCESS**

1. The European integration model for operating an Imbalance Netting Process shall be based on:
  - (a) a TSO-TSO Model; and
  - (b) one Coordinated Balancing Area.
2. No later than three years after the entry into force of this Network Code, all TSOs shall have the right to commonly develop a proposal for modification of the European integration model for the Imbalance Netting Process. The proposal shall be supported by a Cost-Benefit Analysis performed by all TSOs.
3. No later than four years after the entry into force of this Network Code, all TSOs shall commonly develop a proposal for an implementation framework to implement the European integration model for the Imbalance Netting Process.
4. The implementation framework pursuant to paragraph 3 shall include:

- (a) a list of TSOs to whom the implementation of the European integration model for the Imbalance Netting Process applies;
  - (b) a configuration of the Coordinated Balancing Areas for the implementation of the European integration model for the Imbalance Netting Process;
  - (c) implementation timeline of the European integration model; and
  - (d) high-level principles for algorithms and methodologies used.
5. All TSOs shall have the right to propose amendments to the implementation framework pursuant to paragraph 4 during the implementation of the European integration model for the Imbalance Netting Process.
6. All TSOs pursuant to paragraph 4(a) shall establish Coordinated Balancing Areas pursuant to paragraph 4(b) and shall implement the European integration model for the Imbalance Netting Process by the time pursuant to paragraph 4(c).

SECTION 6  
**TARGETS FOR IMBALANCE SETTLEMENT**

**Article 20**  
**TARGETS FOR IMBALANCE SETTLEMENT**

1. No later than three years after the entry into force of this Network Code, all TSOs shall:
  - (a) harmonise the main features for Imbalance calculation pursuant to Article 59 and Imbalance pricing pursuant to Article 60; and
  - (b) harmonise principles for the Imbalance Settlement Period pursuant to Article 58 and subject to the results of Cost-Benefit Analysis.

SECTION 7  
**FUNCTIONS AND RESPONSIBILITIES**

**Article 21**  
**ROLE OF THE TSOs**

1. Each TSO shall operate either a Self Dispatch system or a Central Dispatch system.
2. Each TSO shall be responsible for procuring Balancing Services from Balancing Service Providers to ensure Operational Security.
3. TSOs shall not offer Balancing Services themselves except, upon regulatory approval, if there is insufficient Reserve Capacity with respect to dimensioning requirements pursuant to *[Article 46 FRR Dimensioning]* and *[Article 48 RR Dimensioning]* of the Network Code on Load-Frequency Control and Reserves.
4. All decisions by TSOs within of a Coordinated Balancing Area, or any other cooperation between two or more TSOs dealing with the Exchange of Balancing Services and Sharing of Reserves or operating the Imbalance Netting Process as stipulated in this Network Code, shall be unanimous.

**Article 22**  
**COOPERATION WITH DSOs**

1. Each DSO shall respect the terms and conditions related to Balancing pursuant to Article 26.
2. DSOs, TSOs and Balancing Service Providers shall cooperate to ensure efficient and effective Balancing.
3. If there is not an agreement on the cost allocation between the DSO and the Connecting TSO, or if no national legislation covering this matter is in place, the DSO shall bear all costs resulting from curtailment of schedules pursuant to *[Article 68 Reserve Providing Units connected to the DSO Grid]* of the Network Code on Load-Frequency Control and Reserves.
4. Any limits defined by DSOs pursuant to *[Article 68 Reserve Providing Units connected to the DSO Grid]* of the Network Code on Load-Frequency Control and Reserves that could affect the provision of this Network Code shall be reported without delay by the DSO to the Connecting TSO.

**Article 23**  
**ROLE OF BALANCING SERVICE PROVIDERS**

1. Each Balancing Service Provider shall respect the terms and conditions related to Balancing pursuant to Article 26.
2. Each Balancing Service Provider shall submit its Balancing Capacity bids if any, as defined by the Connecting TSO, to the Connecting TSO in which the Balancing Service Provider affects one or more Balance Responsible Parties.
3. All Balancing Service Providers which participate in the procurement process for Balancing Capacity pursuant to Article 26(4)(c) shall submit and shall have the right to update their Balancing Capacity bids before the gate closure time of the procurement process.
4. Balancing Service Providers with a contract to provide Balancing Capacity shall submit for the procured volume Balancing Energy bids in accordance with the terms and conditions related to Balancing pursuant to Article 26, for the corresponding products and time period, and before the Balancing Energy Gate Closure Time pursuant to Article 31.
5. Any Balancing Service Provider shall have the right to provide Balancing Energy bids or Balancing Capacity bids for Standard Products or Specific Products, only to its Connecting TSO.
6. For each product for Balancing Capacity or Balancing Energy, the Reserve Providing Unit, Reserve Providing Group, Demand Units or aggregators and the associated Balance Responsible Parties pursuant to Article 26(3)(c), shall belong to the same Responsibility Area or Scheduling Area when appropriate.

**Article 24**  
**ROLE OF BALANCE RESPONSIBLE PARTIES**

1. Each Balance Responsible Party shall respect the terms and conditions related to Balancing pursuant to Article 26.

2. Each Balance Responsible Party shall be financially responsible for the Imbalance to be settled with the Connecting TSO.
3. Each Balance Responsible Party shall be balanced or help the power system to be balanced in accordance with terms and conditions related to Balancing pursuant to Article 26.
4. Each Balance Responsible Party shall provide a balanced Position in the day ahead timeframe on the request of its Connecting TSO.
5. Each Balance Responsible Party shall have the right to change its Position prior to Intraday Cross Zonal Gate Closure Time, pursuant to the terms and conditions related to Balancing pursuant to Article 26.
6. The Balance Responsible Party shall submit any change of the Position to the Connecting TSO.
7. Each Balance Responsible Party shall have the right to change its Position after the Intraday Cross Zonal Gate Closure Time provided it is accepted by its Connecting TSO respecting terms and conditions related to Balancing pursuant to Article 26.

**Article 25**  
**FUNCTIONS IN COORDINATED BALANCING AREAS**

1. The cooperation processes in Coordinated Balancing Areas shall involve the following functions:
  - (a) Imbalance Netting Process Function, where the Imbalance Netting Process is operated;
  - (b) Capacity Procurement Optimisation Function, where the Exchange of Balancing Capacity or Sharing of Reserves is implemented;
  - (c) Transfer of Balancing Capacity Function, in case a Transfer of Balancing Capacity is possible;
  - (d) Activation Optimisation Function, in cases where the Exchange of Balancing Energy is implemented; and
  - (e) TSO-TSO Settlement Function.
2. Each TSO entrusted with a function pursuant to paragraph 1(a) to 1(d) shall operate the concerned algorithm developed pursuant to CHAPTER 6.
3. Each TSO shall be responsible for these functions in its Responsibility Area.

**Article 26**  
**TERMS AND CONDITIONS RELATED TO BALANCING**

1. Each TSO shall develop a proposal for the terms and conditions related to Balancing for its Responsibility Area or Scheduling Area when appropriate. When developing the terms and conditions related to Balancing, each Connecting TSO shall coordinate with other concerned TSOs and concerned DSOs.
2. The terms and conditions related to Balancing shall respect the frameworks for the establishment of the terms and conditions pursuant to Article 10(4)(a), when one or more such frameworks have been established in Coordinated Balancing Areas to which the TSO belongs.

TSOs which are part of more than one Coordinated Balancing Areas for different Standard Products or operating the Imbalance Netting Process shall ensure that:

- (a) the different frameworks for the establishment of the terms and conditions related to Balancing pursuant Article 10(4)(a) are consistent; and
  - (b) the terms and conditions related to Balancing are compatible with all the frameworks corresponding to all the Coordinated Balancing Areas to which the TSOs belongs.
3. The terms and conditions related to Balancing shall:
  - (a) allow the aggregation of Demand Side Response, the aggregation of generation units, or the aggregation of Demand Side Response and generation units within a Responsibility Area or Scheduling Area where appropriate to offer Balancing Services;
  - (b) allow Demand Facility, aggregators and generation units from conventional and renewable energy sources as well as storage elements to become Balancing Service Providers; and
  - (c) oblige that each Balancing Energy bid from a Balancing Service Provider is assigned to one or more Balance Responsible Parties to enable the calculation of an Imbalance Adjustment pursuant to Article 55.
4. TSOs operating Central Dispatch systems shall not be obliged to allow within the terms and conditions related to Balancing the aggregation of Demand Side Response, the aggregation of generation units, or the aggregation of Demand Side Response and generation units pursuant to paragraph 3.
5. The terms and conditions related to Balancing shall contain at least:
  - (a) rules for Balancing Service Providers;
  - (b) rules for Balance Responsible Parties;
  - (c) rules for the procurement of Balancing Capacity pursuant to Article 33 to Article 36;
  - (d) rules for the settlement defined pursuant to CHAPTER 5 SECTION 2, SECTION 4 and SECTION 5;
    - i. the delineation of Imbalance Area and Imbalance Price Area;
    - ii. a maximum period for the finalisation of settlement of Balancing Energy with Balancing Service Provider, pursuant to Article 51 for any given Imbalance Settlement Period; and
    - iii. a maximum period for the finalisation of settlement of Imbalance with Balance Responsible Parties, pursuant to Article 59 for any given Imbalance Settlement Period;
  - (e) the consequences in case of non-compliance of Balancing Service Providers and Balance Responsible Parties with the terms and conditions related to Balancing.
6. The rules for Balancing Service Providers according to paragraph 5(a) shall contain at least:
  - (a) the requirements for becoming a Balancing Service Provider;
  - (b) the conditions for the aggregation of Demand Side Response, the aggregation of generation units, or the aggregation of Demand Side Response and generation units within a Responsibility Area or Scheduling Area where appropriate to become a Balancing Service Provider where applicable;
  - (c) data and information required at both the pre-qualification stage and during operation;
  - (d) the modalities to identify the Balance Responsible Parties impacting the Imbalance Adjustment per Balancing Service product, pursuant to paragraph 3(c);
  - (e) the data and information required by the Connecting TSO to evaluate the provision of Balancing Services and to calculate Imbalance;

- (f) the requirements and rules including the approval process for the Transfer of Balancing Capacity pursuant to Article 34 and Article 36;
  - (g) the rules for the determination of the volume of Balancing Energy to be settled with the Balancing Service Provider pursuant to CHAPTER 5 SECTION 1;
  - (h) if applicable, the process of modifying Integrated Scheduling Process bids pursuant to Article 30; and
  - (i) if applicable, the Integrated Scheduling Process Gate Closure Time pursuant to Article 31.
7. The rules for Balance Responsible Parties according to paragraph 5(b) shall contain at least:
- (a) the requirements for becoming a Balance Responsible Party;
  - (b) the requirement that Balance Responsible Party shall be financially responsible for the Imbalance to be settled with the Connecting TSO;
  - (c) the data and information required by the Connecting TSO, to calculate Imbalance;
  - (d) the settlement procedures pursuant to Article 59(2) and Article 60(1); and
  - (e) the criteria to modify the Position.
8. Each Connecting TSO shall have the right to include the following within the terms and conditions related to Balancing:
- (a) a requirement for Balance Responsible Parties to provide information on unused generation capacity and other Balancing resources from Balancing Service Providers after Day Ahead Market Gate Closure Time and Intraday Cross Zonal Gate Closure Time;
  - (b) a requirement for Balancing Service Providers to offer their unused generation capacity or other Balancing resources through Balancing Energy bids in the Balancing Markets after Day Ahead Market Gate Closure Time;
  - (c) a requirement for Balancing Service Providers to offer their unused generation capacity or other Balancing resources through Balancing Energy bids in the Balancing Markets after Intraday Cross Zonal Gate Closure Time; and
  - (d) an obligation for Balance Responsible Parties to submit any modification of the Position to the Connecting TSO;
- For the case defined in paragraph 8(b) and 8(c) the proposal for the terms and conditions related to Balancing shall be complemented with a justification for these additional requirements.
9. TSOs operating Central Dispatch systems shall have the right to include the following within the terms and conditions related to Balancing:
- a) limit the submission, and updating of Integrated Scheduling Process bids by defining Integrated Scheduling Process Gate Closure Times in order to ensure that firm Integrated Scheduling Process bids are available as an input to the Integrated Scheduling Process; and
  - b) activate Integrated Scheduling Process bids prior to the Balancing Energy Gate Closure Time on the basis of the results of Integrated Scheduling Process.
10. Each TSO shall have the right to reassess the terms and conditions related to Balancing at any time and propose amendments.
11. Each TSO shall monitor the fulfilment of the requirements set in the terms and conditions related to Balancing by all parties.

**Article 27**  
**SCHEDULING AND DISPATCH ARRANGEMENTS**

1. Each TSO shall have the right to apply to the NRA to be acknowledged as a TSO operating a Central Dispatch system or to stop being acknowledged as a TSO operating a Central Dispatch system. The NRA shall inform its decision to the Agency.
2. Each application pursuant to paragraph 1 shall at least include:
  - (a) the local market arrangement;
  - (b) the scheduling arrangement; and
  - (c) the dispatch arrangement.
3. The application process shall be performed in accordance with Article 6(6). The concerned NRA shall verify whether the tasks and responsibilities of a TSO are consistent with the definition of a Central Dispatch system and Integrated Scheduling Process in this Network Code.

## CHAPTER 3 PROCUREMENT OF BALANCING SERVICES

### SECTION 1 GENERAL PROVISIONS FOR PROCUREMENT

#### Article 28 REQUIREMENTS FOR STANDARD AND SPECIFIC PRODUCTS

1. Each TSO shall use Standard Products and Specific Products when available in order to:
  - (a) maintain system balance in the respect of *[Article 19 Frequency Quality Target Parameters]* of the Network Code on Load-Frequency Control and Reserves; and
  - (b) ensure Operational Security.
2. No later than one year after entry into force of this Network Code, all TSOs shall develop a proposal for Standard Products for Balancing Capacity and Standard Products for Balancing Energy.
3. All TSOs shall have the right to review and develop an updated proposal for the characteristics of Standard Products for Balancing Capacity and Standard Products for Balancing Energy regarding their adequacy with system needs.
4. All TSOs shall submit the proposals to define, review or update Standard Products for Balancing Capacity and Standard Products for Balancing Energy to all NRAs for approval. The proposal shall at the same time be submitted to the Agency for information.
5. The Standard Products for Balancing Capacity and Standard Products for Balancing Energy shall consist of at least the following standard characteristics and information related to a bid defined by a fixed value or an appropriate range, depending on the requirements of the system and type of product:
  - (a) Preparation Period
  - (b) Ramping Period;
  - (c) Full Activation Time;
  - (d) minimum and maximum quantity;
  - (e) Deactivation Period;
  - (f) price of the bid;
  - (g) Divisibility;
  - (h) minimum and maximum duration of Delivery Period;
  - (i) location;
  - (j) Validity Period;
  - (k) Mode of Activation; and
  - (l) minimum duration between the end of Deactivation Period and the following activation.
6. Standard Products for Balancing Capacity and Standard Products for Balancing Energy shall:
  - (a) satisfy the needs of TSOs in order to ensure Operational Security and efficiently fulfil Frequency Quality Target Parameters pursuant to *[Article 19 Frequency Quality Target Parameters]* of the Network Code on Load-Frequency Control and Reserves;
  - (b) allow the participation of load entities, energy storage facilities and generation, including renewables sources and aggregation facilities as a Balancing Service Provider;
  - (c) respect the Frequency Restoration Reserves and Replacement Reserves technical requirements, pursuant to *[Article 47 FRR Technical Minimum Requirements]* and



- [Article 49 RR Technical Minimum Requirements]* of the Network Code on Load-Frequency Control and Reserves;
- (d) consider the impact on the volumes pursuant to *[Article 46 FRR Dimensioning]* and *[Article 48 RR Dimensioning]* of the Network Code on Load-Frequency Control and Reserves; and
  - (e) foster cross-border competition, liquidity and avoid undue market fragmentation.
7. Each TSO shall have the right to define and use Specific Products for Balancing Capacity and Specific Products for Balancing Energy. In case a TSO chooses to define and use Specific Products it shall submit a proposal to its NRA no later than two years after entry into force of this Network Code. While assessing the request for a Specific Product the NRA shall take into account the following requirements:
- (a) Standard Products are not sufficient to operate Balancing and respect Operational Security or enable the participation of resources that cannot be offered through Standard Products;
  - (b) Specific Products shall not create significant inefficiencies and distortions in national markets or in the Coordinated Balancing Area;
  - (c) Specific Products shall be visible for other TSOs of the Coordinated Balancing Area; and
  - (d) Specific Products could be marked as unavailable for activation by other TSOs of the Coordinated Balancing Area when Operational Security is endangered.
8. Each TSO shall have the right to reassess and develop an updated proposal for Specific Products for Balancing Capacity and Specific Products for Balancing Energy.

## **Article 29 CONVERSION OF PRODUCTS**

Connecting TSOs using Specific Products shall have the right to convert these products into Standard Products used in the concerned Coordinated Balancing Area and submit them to the Activation Optimisation Function or the Capacity Procurement Optimisation Function.

## **Article 30 MODIFICATION OF BIDS IN CENTRAL DISPATCH SYSTEMS**

1. TSOs operating Central Dispatch systems shall have the right to use Integrated Scheduling Process bids for the purpose of the Exchange of Balancing Services.
2. TSOs operating Central Dispatch systems shall use all Integrated Scheduling Process bids respecting Operational Security Constraints, to provide Balancing Services to other TSOs.
3. TSOs operating Central Dispatch systems shall have the right to modify Integrated Scheduling Process bids referred in paragraph 1 for the purpose of the Exchange of Balancing Services taking into account Operational Security.
4. Integrated Scheduling Process bids modified by TSOs operating Central Dispatch systems for the purpose of the Exchange of Balancing Services shall be compatible with Standard Products exchanged in Coordinated Balancing Area.

**Article 31**  
**BALANCING ENERGY GATE CLOSURE TIME**

1. All TSOs of a Coordinated Balancing Area shall commonly define and agree on Balancing Energy Gate Closure Times.
2. The Balancing Energy Gate Closure Time shall be defined for each Standard Product for Balancing Energy per Coordinated Balancing Area.
3. After the Balancing Energy Gate Closure Time the update of a Balancing Energy bid for a Standard Product in a Coordinated Balancing Area is no longer permitted. After this time the volume and price of Balancing Energy bids can only be changed with approval of all TSOs of the concerned Coordinated Balancing Area.
4. A Balancing Energy Gate Closure Time shall:
  - (a) be after the Intraday Cross Zonal Gate Closure Time for manually activated Balancing Energy bids and avoid cross zonal Intraday Market taking place at the same time;
  - (b) be allowed to be before the Intraday Cross Zonal Gate Closure Time for automatically activated Balancing Energy bids;
  - (c) ensure sufficient time for common processing of Balancing Energy bids; and
  - (d) ensure sufficient time for all TSOs of a Coordinated Balancing Area to perform all processes linked to the activation of Balancing Energy bids.
5. Unexpected unavailable volumes of Balancing Energy bids of a Balancing Service Provider after the Balancing Energy Gate Closure Time shall be reported without undue delay by the Balancing Service Provider to the Connecting TSO. Connecting TSOs shall qualify such Balancing Energy bids as invalid within the concerned Common Merit Order List.
6. Each TSO operating a Central Dispatch system shall define an Integrated Scheduling Process Gate Closure Time for its Responsibility Area.
7. An Integrated Scheduling Process Gate Closure Time shall:
  - (a) not be after Balancing Energy Gate Closure Time;
  - (b) be allowed to be before the Intraday Cross Zonal Gate Closure Time;
  - (c) ensure sufficient time for TSOs to perform Integrated Scheduling Process; and
  - (d) ensure sufficient time for TSOs to prepare and submit Balancing Energy bids to the Activation Optimisation Function.
8. After the Integrated Scheduling Process Gate Closure Time the volume and price of the Integrated Scheduling Process Bids can only be changed with approval of the Connecting TSO.

**Article 32**  
**FALL-BACK PROCEDURES**

1. Each TSO shall ensure that fall-back solutions are in place in case the normal procedures fail.
2. In case the procurement of Balancing Services fails, all TSOs of a Coordinated Balancing Area shall use their best endeavours to perform a repetition of the procurement process consistent with the objectives of this Network Code. TSOs shall inform Market Participants that fall-back procedures will be used as soon as reasonably practicable.

3. In case the coordinated activation of Balancing Energy fails, TSOs may bypass the Common Merit Order List activation and shall inform Market Participants as soon as reasonably practicable.

## SECTION 2

### PROCUREMENT OF BALANCING CAPACITY WITHIN A RESPONSIBILITY AREA

#### Article 33

##### GENERAL PROVISIONS

1. This Article shall apply to all TSOs procuring Balancing Capacity to fulfil dimensioning rules pursuant to *[Article 43 FCR Dimensioning, Article 46 FRR Dimensioning and Article 48 RR Dimensioning]* of the Network Code on Load-Frequency Control and Reserves.
2. All TSOs shall use within its Responsibility Area a market-based method for the procurement of Balancing Capacity for at least Frequency Restoration Reserves and Replacement Reserves.
3. All TSOs shall have the right within its Responsibility Area to contract for the procurement of Balancing Capacity for a maximum period of one year and for a maximum of one year in advance of the provision of the Balancing Capacity. The procurement of Balancing Capacity for a longer period than one year and more than one year in advance of the provision of the Balancing Capacity shall be subject to regulatory approval.
4. The procurement of upward and downward Balancing Capacity shall be carried out separately.
5. Linking the procurement of upward and downward Balancing Capacity shall be allowed for:
  - (a) Frequency Containment Reserves; or
  - (b) Frequency Restoration Reserves and Replacement Reserves upon regulatory approval and when it is demonstrated that it leads to higher efficiency.

#### Article 34

##### TRANSFER OF BALANCING CAPACITY WITHIN A RESPONSIBILITY AREA OR SCHEDULING AREA WHEN APPROPRIATE

1. TSOs of a Responsibility Area or Scheduling Area when appropriate shall allow a Balancing Service Provider to perform a Transfer of Balancing Capacity to another Balancing Service Provider within the same Responsibility Area or Scheduling Area when appropriate.
2. The Transfer of Balancing Capacity shall only be possible when:
  - (a) the transfer receiving Balancing Service Provider has passed the pre-qualification stage for the Balancing Capacity for which the transfer is performed; and
  - (b) approved by a TSO of the Responsibility Area or Scheduling Area when appropriate.

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

**Article 35**  
**GENERAL PROVISIONS**

1. This Article shall apply to all TSOs participating in a Coordinated Balancing Area declared for the Exchange of Balancing Capacity in order to perform the Exchange of Reserves pursuant to *Chapter 9 Section 1 Exchange and Sharing of Reserves within a Synchronous Area and Chapter 9 Section 2 Exchange and Sharing of Reserves between Synchronous Areas*] of the Network Code on Load-Frequency Control and Reserves with another TSO.
2. Each TSO shall have the right to procure Balancing Capacity commonly with another TSO up to limits for the Exchange of Reserves pursuant to *[Chapter 9 Section 1 Exchange and Sharing of Reserves within a Synchronous Area and Chapter 9 Section 2 Exchange and Sharing of Reserves between Synchronous Areas]* of the Network Code on Load-Frequency Control and Reserves.
3. All TSOs of a Coordinated Balancing Area performing the Exchange of Balancing Capacity shall ensure availability of Cross Zonal Capacity either by:
  - (a) using the Probabilistic Approach; or
  - (b) the reservation of Cross Zonal Capacity according to CHAPTER 4 SECTION 1.
4. All TSOs of a Coordinated Balancing Area using the Probabilistic Approach shall inform all TSOs of the concerned LFC Blocks how the risk of unavailability of Reserve Capacity in the Responsibility Area or Scheduling Area when appropriate of the TSO affects the fulfilment of the requirements pursuant to *[Article 46(2)(b) FRR Dimensioning]* of the Network Code on Load-Frequency Control and Reserves.
5. No later than two years after the entry into force of this Network Code all TSOs of a Synchronous Area shall commonly develop the methodology for the Probabilistic Approach.
6. TSOs shall not increase the Reliability Margin due to the Exchange of Balancing Services or Sharing of Reserves, beyond the Reliability Margin defined pursuant to *[Article 25 Reliability Margin]* of the Network Code on Capacity Allocation and Congestion Management.
7. All TSOs of a Coordinated Balancing Area shall use a market-based method for the procurement of Balancing Capacity to be exchanged.
8. All TSOs of a Coordinated Balancing Area shall have the right to contract for the procurement of Balancing Capacity for a maximum period of one month and a maximum of one month in advance of the provision of the Balancing Capacity. The procurement of Balancing Capacity for a longer period than one month and more than one month in advance of the provision of the Balancing Capacity shall be subject to regulatory approval.
9. The procurement of upward and downward Balancing Capacity shall be done separately.
10. Linking the procurement of upward and downward Balancing Capacity shall be allowed for:
  - (a) Frequency Containment Reserves; or
  - (b) Frequency Restoration Reserves and Replacement Reserves upon regulatory approval and when it is demonstrated that it leads to higher efficiency.
11. TSOs of a Coordinated Balancing Area pursuant to paragraph 1 shall harmonise procurement processes for the given Balancing Capacity exchanged within a Coordinated Balancing Area.

12. TSOs of a Coordinated Balancing Area shall define a pricing method used in the procurement of Balancing Capacity. The pricing method shall:
  - (a) give correct price signals and right incentives to Market Participants; and
  - (b) ensure that there are no significant distortions between adjacent Coordinated Balancing Areas.
13. All TSOs of a Coordinated Balancing Area for the Exchange of Balancing Capacity shall submit all Balancing Capacity bids for Standard Products to the Capacity Procurement Optimisation Function. TSOs shall not modify or withhold any Balancing Capacity bids and shall include them in the procurement, except as permitted by Article 29 and Article 30.
14. The selection of the Balancing Capacity bids shall be performed by the Capacity Procurement Optimisation Function and shall aim to minimise the overall procurement costs for all commonly procuring TSOs respecting Operational Security constraints, taking the costs of ensuring the availability of Cross Zonal Capacity for Balancing Capacity pursuant to CHAPTER 4 SECTION 1 into account.

#### **Article 36**

##### **TRANSFER OF BALANCING CAPACITY WITHIN A COORDINATED BALANCING AREA**

1. TSOs of a Coordinated Balancing Area shall allow a Balancing Service Provider to perform a Transfer of Balancing Capacity to another Balancing Service Provider within the same Coordinated Balancing Area for the Exchange of Balancing Capacity.
2. Transfer of Balancing Capacity shall only be possible if the transfer receiving Balancing Service Provider has passed a pre-qualification stage for the Balancing Capacity for which the transfer is performed.
3. Transfer of Balancing Capacity shall be valid only if approved by the concerned TSOs of the Coordinated Balancing Area.
4. When approving the Transfer of Balancing Capacity, TSOs of a Coordinated Balancing Area shall commonly verify security constraints, in particular, limits pursuant to the [*Chapter 9 Section 1 Exchange and Sharing of Reserves within a Synchronous Area and Chapter 9 Section 2 Exchange and Sharing of Reserves between Synchronous Areas*] Network Code on Load-Frequency Control and Reserves and pursuant to Article 35(3).
5. The Transfer of Balancing Capacity shall only be possible if Cross Zonal Capacity is available pursuant to Article 35(3).

#### **Article 37**

##### **EXEMPTION IN THE FORM OF A TSO-BSP MODEL**

1. Each Connecting TSO and Contracting TSO may request an exemption from the TSO-TSO Model for the Exchange of Balancing Capacity and the Exchange of Balancing Energy from Frequency Restoration Reserves and Replacement Reserves. In that case the respective TSO and Balancing Service Provider may be exempted from the application of the provisions from Article 23(2), Article 23(5), Article 39(8), and Article 50(8).
2. Every request for an exemption pursuant to Article 37(1) shall contain:
  - (a) the requested exemption period;
  - (b) the detailed reasons for the exemption, including the financial information justifying the need for the exemption; and

- (c) the Cost-Benefit Analysis undertaken pursuant to Article 68.
3. The exemption can be granted under the following conditions:
    - (a) a methodology for ensuring available sufficient Cross Zonal Capacity in accordance with CHAPTER 4 SECTION 1 shall be developed;
    - (b) a compensation mechanism for the use of Cross Zonal Capacity for the Exchange of Balancing Capacity under this Article shall be developed; and
    - (c) a detailed Cost-Benefit Analysis justifies the need for the exemption pursuant to Article 68.
  4. On the request of the Contracting TSO both the Contracting TSO and the Connecting TSO shall jointly perform a Cost-Benefit Analysis pursuant to Article 68 indicating implications of the application of a TSO-BSP Model for the Exchange of Balancing Capacity and the Exchange of Balancing Energy for at least the Responsibility Area or Scheduling Area when appropriate of the Contracting TSO and the Connecting TSO.
  5. The exemption pursuant to Article 37(1) shall be subject to approval by both NRAs of the Responsibility Areas of the Contracting TSO and the Connecting TSO taking into account the Cost-Benefit Analysis pursuant to Article 37(4). The exemption shall be granted only prior to the implementation of the European integration model pursuant to CHAPTER 2 SECTION 2 to SECTION 5 unless Article 37(7) applies.
  6. In case the exemption is granted:
    - (a) settlement between TSOs pursuant to CHAPTER 5 SECTION 3 shall be applicable;
    - (b) an agreement between the Contracting TSO and the Connecting TSO about technical and contractual requirements, the activation of Balancing Energy bids and the settlement of Balancing Services shall be established; and
    - (c) the Contracting TSO and the Balancing Service Provider shall establish contractual arrangements in the form of a TSO-BSP Model.
  7. At the time of implementation of the European integration model pursuant to CHAPTER 2 SECTION 2 to SECTION 5 the Exchange of Balancing Capacity from Frequency Restoration Reserves and Replacement Reserves shall be in the form of the TSO-TSO Model for FRR and RR for TSOs that have implemented the Frequency Restoration Process and the Reserve Replacement Process.
  8. A TSO-BSP Model for Exchange of Balancing Capacity or the Exchange of Balancing Energy can be granted under the conditions pursuant to Article 37(1) to Article 37(7) also after the implementation of the regional integration model and the European integration model pursuant to CHAPTER 2 SECTION 2 to SECTION 5 in case a TSO-TSO Model cannot be implemented due to Connecting TSOs which are not operating the Frequency Restoration Process or the Reserve Replacement Process as part of the Load-Frequency-Control Structure as defined in the Synchronous Area Operational Agreement pursuant the Network Code on Load-Frequency Control and Reserves.

SECTION 4  
**PROCUREMENT OF BALANCING ENERGY**

**Article 38**  
**GENERAL PROVISIONS**

1. All TSOs shall harmonise the pricing methods for at least each Standard Product for Balancing Energy. The pricing method shall:
  - (a) give correct price signals and incentives to Market Participants; and
  - (b) take markets of previous timeframes into account.
2. No later than one year after the entry into force of this Network Code, all TSOs shall develop a proposal for the pricing methods of each Standard Product for Balancing Energy. The pricing methods shall be based on marginal pricing (pay-as-cleared), unless TSOs complement the proposal with a detailed analysis demonstrating that a different pricing method is more efficient for European-wide implementation in pursuing the general objectives defined in Article 9.
3. TSOs shall have the right to review the pricing methods of each Standard Product for Balancing Energy and submit an updated proposal.
4. All TSOs of a Coordinated Balancing Area shall apply the pricing methods developed under paragraph 2 for each Standard Product for Balancing Energy exchanged within the Coordinated Balancing Area.
5. TSOs of a Coordinated Balancing Area shall have the right to include a different pricing method other than the one described in their common proposal for a Coordinated Balancing Area pursuant to Article 10(4), provided that a detailed analysis demonstrates that this different pricing method is more efficient within this Coordinated Balancing Area in pursuing the general objectives defined in Article 9. TSOs of a Coordinated Balancing Area shall have the right to apply a different pricing method prior to the implementation of the European integration model pursuant to CHAPTER 2 SECTION 2 to SECTION 5.
6. Each TSO shall have the right to apply a different pricing method for any Standard Product for Balancing Energy provided that the TSO does not participate in a Coordinated Balancing Area for this Standard Product for Balancing Energy. Each TSO shall have the right to apply a different pricing method until the TSO participates in a Coordinated Balancing Area for this Standard Product for Balancing Energy.

SECTION 5  
**ACTIVATION OF BALANCING ENERGY BIDS**

**Article 39**  
**GENERAL PROVISIONS**

1. Each TSO shall have the right to activate Balancing Energy bids within its Responsibility Area for ensuring Operational Security under the condition that the price of Balancing Energy bids, activated for purposes other than Balancing shall not determine the Imbalance Price.
2. TSOs within its Responsibility Area shall have the right to request the delivery of Balancing Energy prior to Balancing Energy Gate Closure Time when Operational Security is endangered or compromised.

3. No later than twelve months after the entry into force of this Network Code, all TSOs shall commonly develop and agree on a methodology regarding the activation purposes of Balancing Energy bids in line with the general objectives of the Balancing Market pursuant to Article 9.
4. The purpose for every activated Balancing Energy bid shall be submitted to the Activation Optimisation Function and shall be visible for all participating TSOs.
5. Balancing Energy bids for automatic Frequency Restoration Reserves shall be exclusively available for the purpose to maintain the active power balance.
6. In the event that the activation of Balancing Energy bids for Balancing purposes deviates from the merit order activation mechanism, the TSO shall publish information on the occurrence of such activation in a timely manner.
7. The activation request of a Balancing Energy bid from the Activation Optimisation Function of a Coordinated Balancing Area shall oblige the Requesting TSO to accept the firmness of the activated Balancing Energy bid. Each Connecting TSO of a Coordinated Balancing Area shall ensure the activation of the firm Balancing Energy bid selected by the Activation Optimisation Function. The Balancing Energy shall be settled between the Requesting TSO and the Connecting TSO pursuant to Article 56 and between the Connecting TSO and the Balancing Service Provider pursuant to CHAPTER 5 SECTION 2.
8. The activation of Balancing Energy bids shall be based on a TSO-TSO Model.
9. Each TSO of a Coordinated Balancing Area shall submit all necessary data for the operation of the algorithm pursuant Article 65(3) to the Activation Optimisation Function in accordance with the rules developed pursuant to Article 40(1).
10. Each TSO shall have the right to submit a proposal for a methodology for the calculation of unshared bids, while respecting the following principles:
  - (a) the volume of unshared bids shall not be higher than the Reserve Capacity;
  - (b) unshared bids shall be the most expensive available Balancing Energy bids for Standard Products and the available Balancing Energy bids for Specific Products;
  - (c) the methodology for the calculation of unshared bids shall be updated at least on a yearly basis; and
  - (d) unshared bids shall not be shared on Common Merit Order Lists and therefore not available for activation by other TSOs.
11. Each Connecting TSO shall submit prior to the TSO Energy Bid Submission Gate Closure Time all Balancing Energy bids for Standard Products received from Balancing Service Providers to the Activation Optimisation Function, taking into account the provisions of Article 29 and Article 30, with the exception of unshared bids. The Connecting TSOs shall not modify or withhold Balancing Energy bids for Standard Products, except as permitted by Article 29 and Article 30.
12. Each Requesting TSO shall have the right to request the activation of Balancing Energy bids from the Common Merit Order Lists of the respective Coordinated Balancing Area up to the total volume of all Balancing Energy bids submitted by the Requesting TSO for that Delivery Period and Standard Product to the Activation Optimisation Function.
13. The limitation as defined in paragraph 12 shall not be applicable in cases all TSOs of the concerned Coordinated Balancing Area agreed on. In any case, each TSO requesting Balancing



Energy beyond limitation pursuant to paragraph 12, all other TSOs of the concerned Coordinated Balancing Area shall be informed in a timely manner.

14. In case of Sharing of Reserves, the Requesting TSO shall have the right to request additional volumes to the volumes defined in paragraph 12. These additional volumes shall not exceed the shared Balancing Capacity volumes and may not be used in case the other TSO participating in the Sharing of Reserves has already requested the activation of these shared volumes.

#### **Article 40**

#### **ACTIVATION MECHANISM FOR BALANCING ENERGY**

1. No later than specified in CHAPTER 2 SECTION 2 to SECTION 5 for all targets, all TSOs of a Coordinated Balancing Area shall establish an Activation Optimisation Function and define rules for its operation.
2. The Activation Optimisation Function operating the algorithm pursuant to Article 65(3) shall optimise the activation of Balancing Energy bids from a Common Merit Order List through a non-discriminatory, fair, objective and transparent mechanism by optimisation of the use of Balancing resources and of the transmission infrastructure and minimises the costs of Balancing respecting Operational Security constraints, particularly taking into account:
  - (a) limits and restrictions for the Exchange of Balancing Energy pursuant to [*Chapter 9 Section 1 Exchange and Sharing of Reserves within a Synchronous Area and Chapter 9 Section 2 Exchange and Sharing of Reserves between Synchronous Areas*] of the Network Code on Load-Frequency Control and Reserves; and
  - (b) technical and network constraints.
3. Common Merit Order Lists shall consist of Balancing Energy bids for Standard Products for Balancing Energy. All TSOs of a Coordinated Balancing Area shall define the necessary Common Merit Order Lists based on the Standard Products. Upward and downward Balancing Energy bids shall be separated in different Common Merit Order Lists.
4. Each Activation Optimisation Function shall establish at least one Common Merit Order List for upward Balancing Energy bids and one Common Merit Order List for downward Balancing Energy bids.
5. Depending on the requirement for Standard Products for Balancing Energy, TSOs shall have the right to create more Common Merit Order Lists.
6. The Activation Optimisation Function shall place Balancing Energy bids coming from procured Balancing Capacity which can be activated only a limited number of times per contract period at the end of the concerned Common Merit Order List and shall order these Balancing Energy bids to reflect relative scarcity.
7. Each TSO shall submit their activation requests for Balancing Energy bids to the Activation Optimisation Function.
8. The Activation Optimisation Function shall select Balancing Energy bids and request the activation of selected Balancing Energy bids from the Connecting TSOs of the respective Coordinated Balancing Area where the Balancing Service Provider associated with the selected Balancing Energy bid is connected.

9. The Activation Optimisation Function shall submit confirmation of the activated Balancing Energy bids to the TSO, requesting the activation of Balancing Energy bids. The activated Balancing Service Providers shall be responsible for delivering the requested volume prior to the end of the Delivery Period.
10. All TSOs of a Coordinated Balancing Area shall have the right to establish an Activation Optimisation Function in accordance with Article 28 and Article 39 for the optimisation of the activation of Balancing Energy bids from different Common Merit Order Lists. This function shall at least take into account:
  - (a) activation processes and technical constraints from different Balancing products;
  - (b) Operational Security;
  - (c) all Balancing Energy bids included in the compatible Common Merit Order Lists;
  - (d) submitted activation requests of all TSOs of a Coordinated Balancing Area; and
  - (e) available Cross Zonal Capacity.

## **CHAPTER 4**

### **CROSS ZONAL CAPACITY FOR BALANCING SERVICES**

#### **SECTION 1**

#### **CROSS ZONAL CAPACITY FOR THE EXCHANGE OF BALANCING CAPACITY AND SHARING OF RESERVES**

#### **Article 41**

#### **RESERVATION OF CROSS ZONAL CAPACITY FOR TSOs**

1. TSOs shall have the right to reserve Cross Zonal Capacity for the Exchange of Balancing Capacity or Sharing of Reserves when socio-economic efficiency is proved in accordance with this Section using one of the following approaches:
  - (a) co-optimisation process pursuant to Article 43;
  - (b) market-based reservation process pursuant to Article 44; and
  - (c) reservation based on economic efficiency analysis, pursuant to Article 45.
2. Cross Zonal Capacity reserved for the Exchange of Balancing Capacity or Sharing of Reserves shall be included as previously allocated Cross Zonal Capacity in calculations of Cross Zonal Capacity.
3. In case Cross Zonal Capacity for the Exchange of Balancing Capacity is reserved by Physical Transmission Right holders it shall be considered as nominated solely for the purpose of excluding it from the application of the Use-it-or-sell-it (UIOSI) principle pursuant to *[Article 36(2) Physical Transmission Rights]* of the Network Code on Forward Capacity Allocation or Use-it-or-lose-it (UIOLI) principle pursuant to *[Article 2.5 Congestion-management Methods]* of the Congestion Management Guidelines which form an Annex I to the Regulation (EC) No 714/2009.
4. Cross Zonal Capacity reserved for the Exchange of Balancing Capacity or Sharing of Reserves shall be used exclusively for Replacement Reserves or Frequency Restoration Reserves with manual activation or Frequency Restoration Reserves with automatic activation and operating the Imbalance Netting Process or Frequency Containment Reserves it was reserved for. Cross Zonal Capacity reserved for Frequency Restoration Reserves with automatic activation can also be used for operating the Imbalance Netting Process.
5. TSOs shall regularly assess whether the Cross Zonal Capacity reserved for the Exchange of Balancing Capacity or Sharing of Reserves is still needed for that purpose. When Cross Zonal Capacity reserved for the Exchange of Balancing Capacity or Sharing of Reserves is no longer needed for that purpose, it shall be released and returned for allocation of Cross Zonal Capacity in the following Capacity Allocation timeframes. Such Cross Zonal Capacity shall not longer be included as previously allocated Cross Zonal Capacity in the Capacity Calculation Methodology.
6. When Cross Zonal Capacity reserved for the Exchange of Balancing Capacity or Sharing of Reserves has not been used for the associated Exchange of Balancing Energy it shall be released for the Exchange of Balancing Energy with shorter activation times or for operating the Imbalance Netting Process.
7. The TSOs reserving Cross Zonal Capacity shall provide all TSOs of the concerned Capacity Calculation Regions, at least one month before the regulatory approval, with:

- (a) the methodologies applied for the reservation of Cross Zonal Capacity for the Exchange of Balancing Capacity and Sharing of Reserves pursuant to Article 43 or Article 44; or
  - (b) the reservation based on the economic efficiency analyses pursuant to Article 45; and
  - (c) an impact assessment of the power flows in the Capacity Calculation Region due to the reservation of Cross Zonal Capacity.
8. The TSOs reserving Cross Zonal Capacity shall agree with the TSOs whose Operational Security is significantly influenced by the reservation of Cross Zonal Capacity, before the regulatory approval, on:
- (a) the Cross Zonal Capacity reservation methodologies applied pursuant to Article 43 or Article 44; or
  - (b) the reservation based on the economic efficiency analyses pursuant to Article 45.

#### **Article 42**

#### **CALCULATION OF MARKET VALUE OF CROSS ZONAL CAPACITY**

1. The market value of Cross Zonal Capacity for the Exchange of Balancing Capacity or Sharing of Reserves and for the exchange of energy used in a co-optimisation process or in a market-based reservation process shall be based on actual or forecasted market values of Cross Zonal Capacity calculated pursuant to this Article.
2. The actual market value of Cross Zonal Capacity for the exchange of energy shall be calculated based on the bids by Market Participants in the auctions for Cross Zonal Capacity for the exchange of energy.
3. The actual market value of Cross Zonal Capacity for the Exchange of Balancing Capacity used in the co-optimisation process or the market-based reservation process shall be calculated based on Balancing Capacity bids, submitted to the Capacity Procurement Optimisation Function pursuant to Article 35(11).
4. The actual market value of Cross Zonal Capacity for Sharing of Reserves used in the co-optimisation process or the market-based reservation process shall be calculated based on the avoided costs of procuring Balancing Capacity bids.
5. The methodology to forecast the market value of Cross Zonal Capacity shall be based on one of the following principles:
  - (a) the use of transparent market indicators that disclose the market value of Cross Zonal Capacity; or
  - (b) the use of forecasting methodology that enable reliable assessment of the market value of Cross Zonal Capacity.

#### **Article 43**

#### **METHODOLOGY OF A CO-OPTIMISATION PROCESS**

1. TSOs shall have the right to develop a methodology for the co-optimisation process of Cross Zonal Capacity for the Exchange of Balancing Capacity or Sharing of Reserves.
2. TSOs shall bid the actual market value of Cross Zonal Capacity for the Exchange of Balancing Capacity or Sharing of Reserves, as described in Article 42, into auctions for Cross Zonal Capacity for the exchange of energy in an electricity market for the concerned timeframe.

3. TSOs shall reserve the allocated Cross Zonal Capacity due to these auctions for the Exchange of Balancing Capacity or Sharing of Reserves.
4. The pricing method for reserved Cross Zonal Capacity in the co-optimisation process shall provide an adequate compensation for Cross Zonal Capacity and shall be based on the price settled in the auction for Cross Zonal Capacity for the exchange of energy for the timeframe where reservation is executed.

#### **Article 44**

#### **METHODOLOGY FOR A MARKET-BASED RESERVATION**

1. TSOs shall have the right to develop a methodology for the market-based reservation process of Cross Zonal Capacity for the Exchange of Balancing Capacity or Sharing of Reserves.
2. The Cross Zonal Capacity reservation methodology for the Exchange of Balancing Capacity or Sharing of Reserves shall be based on a comparison of the actual market value of Cross Zonal Capacity for the Exchange of Balancing Capacity or Sharing of Reserves, and the forecasted market value of Cross Zonal Capacity for the exchange of energy, calculated as described in Article 42.
3. The pricing method for reserved Cross Zonal Capacity in the market based reservation shall provide an adequate compensation for Cross Zonal Capacity and shall be based on the forecasted or actual market values for Cross Zonal Capacity in the concerned timeframe.

#### **Article 45**

#### **RESERVATION BASED ON A ECONOMIC EFFICIENCY ANALYSIS**

1. TSOs shall have the right to propose the reservation of Cross Zonal Capacity for the Exchange of Balancing Capacity or Sharing of Reserves based on an economic efficiency analysis.
2. The economic efficiency analysis shall be based on a comparison of the forecasted market value of Cross Zonal Capacity for the Exchange of Balancing Capacity or Sharing of Reserves, and the forecasted market value of Cross Zonal Capacity for exchanges of energy, pursuant to Article 42.
3. TSOs shall reassess the value of the reserved Cross Zonal Capacity within the process of procurement of Balancing Capacity based on Balancing Capacity bids and release the reserved Cross Zonal Capacity which is no longer beneficial to use for the Exchange of Balancing Capacity or Sharing of Reserves.
4. The pricing method for reserved Cross Zonal Capacity in a reservation based on an economic efficiency analysis shall provide an adequate compensation for Cross Zonal Capacity and shall be based on the calculated forecasted market value for Cross Zonal Capacity in the concerned timeframe.

**Article 46**  
**RESERVATION OF CROSS ZONAL CAPACITY FOR BALANCING SERVICE PROVIDER**

1. Cross Zonal Capacity in the form of a Physical Transmission Right made available by a Balance Responsible Party to a Balancing Service Provider can be reserved for the Exchange of Balancing Capacity prior to the day ahead timeframe when a TSO-BSP Model, pursuant to Article 37, is applied.
2. Cross Zonal Capacity reserved for the Exchange of Balancing Capacity shall be included as previously allocated Cross Zonal Capacity in calculations of Cross Zonal Capacity.
3. In case Cross Zonal Capacity for the Exchange of Balancing Capacity is reserved by Physical Transmission Right holders it shall be considered as nominated solely for the purpose of excluding it from the application of the Use-it-or-sell-it (UIOSI) principle pursuant to [Article 36(2) Physical Transmission Rights] of the Network Code on Forward Capacity Allocation or Use-it-or-lose-it (UIOLI) principle pursuant to [Article 2.5 Congestion-management Methods] of the Congestion Management Guidelines which form an Annex I to the Regulation (EC) No 714/2009.
4. If updated information reveals that reserved Cross Zonal Capacity is not any longer needed for the Exchange of Balancing Capacity, it shall be released as soon as possible pursuant to Article 41(6).

**SECTION 2**  
**CROSS ZONAL CAPACITY FOR THE EXCHANGE OF BALANCING ENERGY**

**Article 47**  
**USE OF CROSS ZONAL CAPACITY FOR THE EXCHANGE OF BALANCING ENERGY OR  
IMBALANCE NETTING PROCESS**

1. Each TSO shall have the right to use Cross Zonal Capacity for the Exchange of Balancing Energy or operating the Imbalance Netting Process where Cross Zonal Capacity is:
  - (a) available after the Intraday Cross Zonal Gate Closure Time; or
  - (b) reserved for Balancing Capacity, in accordance with CHAPTER 4 SECTION 1; or
  - (c) released, pursuant to Article 41.

**Article 48**  
**CALCULATION OF CROSS ZONAL CAPACITY FOR THE EXCHANGE OF BALANCING ENERGY OR  
IMBALANCE NETTING PROCESS**

1. All TSOs shall use the available Cross Zonal Capacity after gate closure of intraday timeframe, pursuant to [Article 67 Operation of the Intraday Market] of the Network Code Capacity Allocation and Congestion Management, as the initial available Cross Zonal Capacity, if no other methodology is developed.
2. All TSOs of a Coordinated Balancing Area shall ensure that the available Cross Zonal Capacity is adjusted in sufficient time when Cross Zonal Capacity changes due to activation of Balancing Energy bids.
3. All TSOs shall have the right to develop a proposal for another methodology for calculations of Cross Zonal Capacity for the Exchange of Balancing Energy or operating the Imbalance Netting

Process. Such methodology shall be consistent with the Capacity Calculation Methodology used in the intraday timeframe and shall avoid market distortions.

4. The availability of Cross Zonal Capacity shall be updated by the TSOs.

#### **Article 49**

#### **PRICING OF CROSS ZONAL CAPACITY FOR THE EXCHANGE OF BALANCING ENERGY OR IMBALANCE NETTING PROCESS**

1. Cross Zonal Capacity used for the Exchange of Balancing Energy or operating the Imbalance Netting Process shall be priced consistently with pricing methods for the exchange of energy in the intraday timeframe and shall provide an adequate compensation for Cross Zonal Capacity.
2. All TSOs shall have the right to develop a proposal for another pricing method for Cross Zonal Capacity for the Exchange of Balancing Energy or operating the Imbalance Netting Process. The Cross Zonal Capacity shall be priced in a manner which:
  - (a) reflects Market Congestion; and
  - (b) is based on actual Balancing Energy bids.
3. TSOs are not allowed to charge any additional charges for the Exchange of Balancing Energy or operating the Imbalance Netting Process except charges for losses, if the charge is consistent with other timeframes and regulatory approval is granted.
4. No later than one year before its implementation, TSOs shall develop the applicable pricing methods consistent with the arrangements established under *[Article 63 Pricing of Intraday Capacity]* of the Network Code on Capacity Allocation and Congestion Management.

## CHAPTER 5 SETTLEMENT

### SECTION 1 SETTLEMENT PRINCIPLES (GENERALITIES)

#### Article 50 GENERAL SETTLEMENT PRINCIPLES

1. The settlement principles shall:
  - (a) establish adequate economic signals which reflect the Imbalance situation;
  - (b) ensure that Balance Responsible Parties support the system balance;
  - (c) encourage Balance Responsible Parties to be balanced as close to the physical reality as possible or help the system to restore its balance;
  - (d) facilitate harmonisation of Imbalance Settlement mechanisms;
  - (e) incentivise TSOs to fulfil their obligations pursuant to *[Article 19 Frequency Quality Target Parameters, Article 43 FCR Dimensioning, Article 46 FRR Dimensioning and Article 48 RR Dimensioning]* the Network Code on Load-Frequency Control and Reserves;
  - (f) avoid distortions of incentives or counterproductive incentives to Balance Responsible Parties, Balancing Service Providers and TSOs;
  - (g) support competition among Market Participants;
  - (h) provide a fair distribution of the benefits and costs associated to the Balancing Markets; and
  - (i) incentivise Balancing Service Providers to offer and deliver Balancing Services to the Connecting TSO.
2. Each NRA shall ensure the financial neutrality of all TSOs under its competence with regard to the financial outcome as a result of the settlement pursuant to SECTION 2, SECTION 3 and SECTION 4 of this Chapter, over the regulatory period as defined by the NRA.
3. Subject to regulatory approval, the financial outcome as a result of the settlement pursuant to SECTION 2, SECTION 3, and SECTION 4 of this Chapter may include other costs and allowed return related to Balancing.
4. TSOs shall not be allowed to use the financial outcome as a result of the settlement pursuant to SECTION 2, SECTION 3 and SECTION 4 of this Chapter to cover the cost of any congestion.
5. All Balancing Energy procured by the Connecting TSO in its Responsibility Area shall be subject to settlement pursuant to SECTION 2 of this Chapter.
6. All exchanged energy between TSOs shall be subject to settlement pursuant to SECTION 3 of this Chapter.
7. All injections and withdrawals within a Bidding Zone that are not subject to settlement pursuant to SECTION 3 shall be subject to settlement pursuant to SECTION 4 of this Chapter.
8. The procurement of Balancing Capacity pursuant to Article 33 and Article 35 shall be subject to settlement pursuant to SECTION 5 of this Chapter.
9. TSOs shall be responsible for shortcomings in its measurements and reporting.



SECTION 2  
**SETTLEMENT OF BALANCING ENERGY WITH BALANCING SERVICE PROVIDERS**

**Article 51**  
**GENERAL PRINCIPLES FOR BALANCING ENERGY**

1. Each TSO shall establish for the settlement of Balancing Energy with Balancing Service Providers, for at least the Frequency Restoration Process and Reserve Replacement Process, a procedure for:
  - (a) calculation of activated volume of Balancing Energy based on requested or metered activation; and
  - (b) claiming recalculation of activated volume of Balancing Energy.
2. Each TSOs shall calculate the activated volume of Balancing Energy to be used as an Imbalance Adjustment at least:
  - (a) for each Imbalance Settlement Period;
  - (b) for each Imbalance Area; and
  - (c) for each direction, with negative indicating relative withdrawal and positive indicating relative injection.
3. Each TSO shall settle the activated volume of Balancing Energy with the Balancing Service Provider.

**Article 52**  
**BALANCING ENERGY FOR FREQUENCY CONTAINMENT PROCESS**

1. Each Connecting TSO shall have the right to calculate and to settle the activated volume of Balancing Energy for the Frequency Containment Process with Balancing Service Providers pursuant to Article 51(2).
2. The price of activated volume of Balancing Energy for the Frequency Containment Process shall be defined for each direction.

**Article 53**  
**BALANCING ENERGY FOR THE FREQUENCY RESTORATION PROCESS WITH MANUAL OR AUTOMATIC ACTIVATION**

1. Each Connecting TSO shall calculate and settle the activated volume of Balancing Energy for the Frequency Restoration Process with Balancing Service Providers pursuant to Article 51(1) and (2).
2. The price of activated volume of Balancing Energy for the Frequency Restoration Process shall be defined for each direction pursuant to Article 38(1).

**Article 54**  
**BALANCING ENERGY FOR THE RESERVE REPLACEMENT PROCESS**

1. Each Connecting TSO shall calculate and settle the activated volume of Balancing Energy for the Reserve Replacement Process with Balancing Service Providers pursuant to Article 51(1) and (2).
2. The price of activated volume of Balancing Energy for Reserve Replacement Process shall be defined for each direction pursuant to Article 38(1).

**Article 55**  
**IMBALANCE ADJUSTMENT TO THE BALANCE RESPONSIBLE PARTY**

1. Each TSO shall calculate an Imbalance Adjustment to be applied to the concerned Balance Responsible Parties for each activated Balancing Energy bid pursuant to Article 51(2).
2. For Imbalance Areas where several finalised Positions for a single Balance Responsible Party are determined pursuant to Article 59 an Imbalance Adjustment may be calculated per notified Position.

**SECTION 3**  
**SETTLEMENT OF THE EXCHANGES OF ENERGY BETWEEN TSOs**

**Article 56**  
**INTENDED EXCHANGES OF ENERGY**

1. No later than two years after the entry into force of this Network Code all TSOs shall develop a proposal for common settlement rules of all intended exchanges of energy as a result of one or more of either the:
  - (a) Reserve Replacement Process;
  - (b) Frequency Restoration Process with manual activation;
  - (c) Frequency Restoration Process with automatic activation; or
  - (d) operating the Imbalance Netting Process.
2. Each TSO-TSO Settlement Function shall perform the settlement.
3. No later than two years after the entry into force of this Network Code, all TSOs intentionally exchanging energy within a Synchronous Area as a result of one or more of either:
  - (a) the Frequency Containment Process; or
  - (b) the Ramping Period;shall develop a proposal for common settlement rules of intended exchanges of energy.
4. No later than two years after the entry into force of this Network Code, all asynchronously connected TSOs intentionally exchanging energy between Synchronous Areas as a result of one or more of either:
  - (a) the Frequency Containment Process for active power output on Synchronous Area level; or
  - (b) the ramping restrictions for active power output on Synchronous Area level;shall develop a proposal for common settlement rules of above mentioned intended exchanges of energy.
5. The proposals of common settlement rules of intended exchanges of energy between TSOs shall ensure fair and equal distribution of costs and benefits between TSOs.

**Article 57**  
**UNINTENDED EXCHANGES OF ENERGY**

1. No later than two years after the entry into force of this Network Code, all TSOs shall develop a proposal for common settlement rules of all unintended exchanges of energy within a Synchronous Area that includes:

- (a) the price for unintended exchanges of energy withdrawn from the Synchronous Area shall reflect the prices for activated upward Balancing Energy for Frequency Restoration Process or Reserve Replacement Process for this Synchronous Area; and
  - (b) the price for unintended exchanges of energy injected into the Synchronous Area shall reflect the prices for activated downward Balancing Energy for Frequency Restoration Process or Reserve Replacement Process for this Synchronous Area.
2. No later than two years after the entry into force of this Network Code, all asynchronously connected TSOs shall develop a proposal for common settlement rules of all unintended exchanges of energy between asynchronously connected TSOs.
  3. The proposals of common settlement rules of unintended exchanges of energy between TSOs shall ensure fair and equal distribution of costs and benefits between TSOs.

## SECTION 4 IMBALANCE SETTLEMENT

### Article 58 IMBALANCE SETTLEMENT PERIOD

1. No later than two years after the entry into force of the Network Code, all TSOs shall submit for approval a proposal to all NRAs based on a Cost-Benefit Analysis on the harmonisation of the Imbalance Settlement Period within and between Synchronous Areas, taking at least into account:
  - (a) the requirement that the Imbalance Settlement Period shall not exceed 30 minutes; and
  - (b) the effects on Frequency Quality Target Parameters pursuant to *[Article 19 Frequency Quality Target Parameters]* of the Network Code on Load-Frequency Control and Reserves;
2. The result of the Cost-Benefit Analysis on the harmonisation of the Imbalance Settlement Period within and between Synchronous Areas shall be reported to the Agency.
3. Notwithstanding the decision on harmonisation according to paragraph 1 no TSO shall be obliged to increase the Imbalance Settlement Period in its Responsibility Area.
4. Each TSO shall have the right to develop a proposal that deviates from the decision pursuant to paragraph 1. In that event, the concerned TSO shall perform a specific Cost-Benefit Analysis pursuant to Article 68.

### Article 59 IMBALANCE CALCULATION

1. Each TSO shall calculate the Imbalance for each Balance Responsible Party from the final Position, the Allocated Volume and the Imbalance Adjustment.
2. Each TSO shall define procedures for:
  - (a) the determination of the final Position from the External Commercial Trade Schedules and Internal Commercial Trade Schedules per Bidding Zone, or where appropriate one or more final Positions from the final Generation Schedules and final load schedules for each Imbalance Area;
  - (b) the determination of the Allocated Volume of all injections and withdrawals;

- (c) the determination of the Imbalance Adjustment pursuant to Article 55 and in case of any curtailment or any activation for other purposes than Balancing;
  - (d) the calculation of the Imbalance; and
  - (e) claim for recalculation of the Imbalance by a Balance Responsible Party.
3. Allocated Volume shall not be calculated for a Balance Responsible Party which does not cover injections or withdrawals.
  4. Each TSO shall calculate the final Position, the Allocated Volume, the Imbalance Adjustment and the Imbalance:
    - (a) for each Imbalance Settlement Period; and
    - (b) for each Imbalance Area.
  5. An Imbalance shall have a size and a direction, indicating the direction of the settlement transaction between Balance Responsible Party and TSO, with negative indicating Balance Responsible Party's shortage, and positive indicating Balance Responsible Party surplus.

**Article 60**  
**IMBALANCE PRICE**

1. Each TSO shall define rules to calculate the Imbalance Price to be paid by the Balance Responsible Party to the TSO or received by Balance Responsible Party from the TSO. The rules shall include a definition of the value of avoided activation of Balancing Energy from Frequency Restoration Reserves or Replacement Reserves.
2. Each TSO shall determine the Imbalance Price:
  - (a) for each Imbalance Settlement Period;
  - (b) for each Imbalance Price Area; and
  - (c) for each Imbalance direction.
3. The Imbalance Price for shortage shall not be less than:
  - (a) the weighted average price for activated positive Balancing Energy for Frequency Restoration Reserves and Replacement Reserves; or
  - (b) in the event that no activation of Balancing Energy in either direction has occurred during the Imbalance Settlement Period, the value of the avoided activation of Balancing Energy for Frequency Restoration Reserves or Replacement Reserves.
4. The Imbalance Price for surplus shall not be greater than:
  - (a) the weighted average price for activated negative Balancing Energy for Frequency Restoration Reserves and Replacement Reserves; or
  - (b) in the event that no activation of Balancing Energy in either direction has occurred during the Imbalance Settlement Period, the value of the avoided activation of Balancing Energy for Frequency Restoration Reserves or Replacement Reserves.
5. Imbalance Settlement Price, in the event that both positive and negative Balancing Energy for Frequency Restoration Reserves or Replacement Reserves have been activated during the same Imbalance Settlement Period, shall be determined for shortage and surplus based on at least one of the principles pursuant to paragraphs 3 and 4.

**Article 61**  
**IMBALANCE SETTLEMENT**

Each TSO shall settle with each Balance Responsible Party all calculated Imbalances pursuant to Article 59 for each Imbalance Settlement Period pursuant to Article 58 against the appropriate Imbalance Price pursuant to Article 61.

**SECTION 5**  
**SETTLEMENT OF BALANCING CAPACITY**

**Article 62**  
**PROCUREMENT OF BALANCING CAPACITY WITHIN A RESPONSIBILITY AREA**

1. Each TSO of a Responsibility Area using Balancing Capacity bids shall define rules for the settlement of at least Frequency Restoration Reserves and Replacement Reserves pursuant to Article 33.
2. Each TSO of a Responsibility Area using Balancing Capacity bids shall settle at least all procured Frequency Restoration Reserves and Replacement Reserves pursuant to Article 33.

**Article 63**  
**PROCUREMENT OF A BALANCING CAPACITY WITHIN A COORDINATED BALANCING AREA**

1. All TSOs participating in a Coordinated Balancing Area declared for the Exchange of Balancing Capacity shall define rules for the settlement of procured Balancing Capacity pursuant Article 35.
2. All TSOs participating in a Coordinated Balancing Area declared for the Exchange of Balancing Capacity shall settle commonly procured Balancing Capacity using the TSO-TSO Settlement Function pursuant to Article 35.
3. All TSOs participating in a Coordinated Balancing Area declared for the Exchange of Balancing Capacity shall define rules for the settlement of reservation of Cross Zonal Capacity pursuant to CHAPTER 4 SECTION 1.
4. All TSOs participating in a Coordinated Balancing Area declared for the Exchange of Balancing Capacity shall settle the reservation of Cross Zonal Capacity pursuant to CHAPTER 4 SECTION 1.

**SECTION 6**  
**SETTLEMENT AMENDMENTS**

**Article 64**  
**GENERAL PRINCIPLES**

1. All TSOs of a Coordinated Balancing Area shall establish a coordinated mechanism for amendments to settlements between all TSOs of a Coordinated Balancing Area, based on the principles set forth in Article 56 and Article 57.

## **CHAPTER 6 ALGORITHM**

### **Article 65 ALGORITHM DEVELOPMENT**

1. No later than one year after the entry into force of this Network Code, all TSOs shall commonly define principles for each of the algorithms applied for the following functions:
  - (a) Imbalance Netting Process Function;
  - (b) Capacity Procurement Optimisation Function;
  - (c) Transfer of Balancing Capacity Function; and
  - (d) Activation Optimisation Function.
2. All TSOs of a Coordinated Balancing Area operating the Imbalance Netting Process shall develop an algorithm to be operated by the Imbalance Netting Process Function, in accordance with the algorithm principles developed pursuant to paragraph 1.
3. All TSOs of a Coordinated Balancing Area for Balancing Energy shall develop an algorithm to be operated by the Activation Optimisation Function for the activation of Balancing Energy bids in accordance with the algorithm principles developed pursuant to paragraph 1.
4. In case a Transfer of Balancing Capacity is possible, all TSOs of a Coordinated Balancing Area for Balancing Capacity shall develop an algorithm to be operated by the Transfer of Balancing Capacity Function for the Transfer of Balancing Capacity, in accordance with the algorithm principles developed pursuant to paragraph 1.
5. All TSOs of a Coordinated Balancing Area for Balancing Capacity shall develop an algorithm to be operated by the Capacity Procurement Optimisation Function for the procurement of Balancing Capacity in accordance with the algorithm principles developed pursuant to paragraph 1.

### **Article 66 ALGORITHM AMENDMENT**

1. All TSOs of a Coordinated Balancing Area shall have the right to propose an amendment of the algorithms applied, in accordance with the principles pursuant to Article 65(1).
2. Proposal for amendments of algorithms from one TSO shall be submitted to all TSOs of the concerned Coordinated Balancing Area and supported by detailed information explaining and documenting the rationale for them.
3. If all TSOs of a Coordinated Balancing Area agree on the proposed amendment, they shall implement the amendment of the algorithm and publish information pursuant to Article 7(3).

## CHAPTER 7 REPORTING

### Article 67 REPORTING

1. ENTSO-E shall publish a report monitoring, describing and analysing the implementation of this Network Code, as well as the progress made in terms of harmonisation and integration of Balancing Markets.
2. The level of report shall vary as follows:
  - (a) every second year a detailed report shall be published; and
  - (b) in years in between a simpler version of the report shall be published to review the progress made and update performance indicators, but without performing additional detailed analysis.
3. No later than six months after the entry into force of this Network Code, ENTSO-E shall inform the Agency on the years in which a detailed report will be published.
4. The detail report shall:
  - (a) describe and analyse the harmonisation process through the evolution of Coordinated Balancing Areas, as well as the progress made in terms of harmonisation and integration of Balancing Markets through the application of this Network Code. The harmonisation process shall include for two adjacent Coordinated Balancing Areas which use the same Standard Product or operating the Imbalance Netting Process:
    - i. an explanation why the Coordinated Balancing Areas do not exchange the concerned Standard Product;
    - ii. all required changes for the exchange of Standard Products;
    - iii. the progress made since the last report and the expected harmonisation between the Coordinated Balancing Areas for the following year;
  - (b) describe the evolution of Balancing resources;
  - (c) assess the progress of coordination of the Balancing Energy activation from Frequency Restoration Reserves and from Replacement Reserves; including a status of the Balancing projects in which TSOs are involved;
  - (d) assess the development of Exchange of Balancing Capacity;
  - (e) assess the compatibility between Coordinated Balancing Areas;
  - (f) assess the progress of harmonisation of Imbalance Settlement arrangements as well as the consequences and possible distortions due to non-harmonised features;
  - (g) include information concerning the volumes of available, procured and used Specific Products, as well as justification of Specific Products subject to conditions pursuant to Article 28(7);
  - (h) justify the volume of Balancing Capacity per TSO;
  - (i) analyse the costs and benefits, and the possible inefficiencies and distortions of having Specific Products in terms of competition and market fragmentation, participation of Demand Side Response and renewable energy sources, integration of Balancing Markets and side-effects on other electricity markets;
  - (j) assess the progress of harmonisation of products and rules for procurement of Balancing Capacity and analyse the effects of non-harmonisation;
  - (k) include the results of Cost-Benefit Analyses pursuant to Article 68; and
  - (l) list all TSOs operating Central Dispatch systems.
5. All TSOs shall provide all required input for the establishment of the report.

6. ENTSO-E shall publish the report on the ENTSO-E website and submit it to the Agency no later than six months after the end of the year it refers to.
7. ENTSO-E shall define performance indicators which shall reflect:
  - (a) availability of Balancing resources, including their distribution and reserved capacity;
  - (b) welfare gain due to the Exchange of Balancing Services;
  - (c) benefits from the use of Standard Balancing products;
  - (d) total cost of Balancing;
  - (e) quality of Balancing;
  - (f) possible inefficiencies and distortions on Balancing Markets;
  - (g) the volume and price of Balancing Energy used for Balancing purposes, both available and activated, from Standard Products and from Specific Products;
  - (h) the evolution of Balancing Service prices of the previous years; and
  - (i) the costs and benefits from all reservation of Cross Zonal Capacity for Balancing Services purposes.
5. All TSOs shall have the right to propose amendments to the report structure, content and the performance indicators.
6. Proposal for amendments of the report structure, content and the performance indicators from one TSO shall be submitted to all TSOs including detailed information explaining and documenting the rationale for the amendments.
7. After implementation of the European integration models pursuant to CHAPTER 2 SECTION 2 to SECTION 5, all TSOs shall review the content and conditions of publication of the reports. Based on the outcome of that review, all TSOs shall develop a new structure and timing for the publication of the reports.



## **CHAPTER 8**

### **COST-BENEFIT ANALYSIS; TRANSITIONAL ARRANGEMENTS AND DEROGATIONS**

#### **Article 68**

##### **COST-BENEFIT ANALYSIS**

1. No later than six months before its application, all concerned TSOs shall submit the criteria and methodology of each Cost-Benefit Analysis for regulatory approval.
2. The Cost-Benefit Analysis shall at least consider the objectives of this Network Code set forth in Article 9, and:
  - (a) technical feasibility;
  - (b) Social Welfare;
  - (c) the costs and benefits of implementation;
  - (d) the impact on European, regional and national Balancing costs;
  - (e) the potential impact on regional energy market prices;
  - (f) the ability of TSOs and Balancing Responsible Parties to fulfil their obligations and
  - (g) the impact on market parties in terms of additional technical or IT requirements.
3. All concerned TSOs shall provide the result of the Cost-Benefit Analysis to all concerned NRAs, together with a justified proposal on how to tackle possible issues with any of the objectives identified by the Cost-Benefit Analysis. The proposal shall be publically consulted pursuant to Article 5. On that basis, the above mentioned NRAs and TSOs shall decide on the way forward.

#### **Article 69**

##### **TRANSITION PERIOD**

1. The duration of the transition period shall be two years starting on the day of entry into force of this Network Code.
2. The transition period shall apply for Article 33 to Article 36 and CHAPTER 5.
3. During the transition period the requirements of the Network Code on Electricity Balancing shall not apply to agreements related to Electricity Balancing between TSOs or between a TSO and a concerned grid user existing at the date of the entry into force of this Network Code. After the transition period the requirements of the Network Code on Electricity Balancing shall also apply to agreements related to Electricity Balancing between TSOs or between a TSO and a concerned grid user existing at the date of the entry into force of this Network Code as well as those concluded during the transition period.

#### **Article 70**

##### **DEROGATIONS**

1. Each TSO shall have the right to apply for derogation in respect of one or more provisions of this Network Code by submitting a written request to the NRA.
2. The derogation process shall be transparent, non-discriminatory, non-biased, well documented and based on a reasoned request by the TSO seeking the derogation and demonstrating the fulfilment of the conditions pursuant to paragraph 3.

3. Derogations shall be granted to TSOs who would be unable to implement certain provisions of this Network Code within the timelines required by this Network Code for the reasons that:
  - (a) the TSO seeking the derogation and would be, at the day of application of the provisions for which derogation is requested, in a significantly different situation from other TSOs in Europe in terms of Balancing arrangements; or
  - (b) the implementation of the provisions for which derogation is requested would result in significant problems in Balancing the Responsibility Area of the TSO seeking the derogation.
4. The request for derogation shall be submitted six months prior to the day of application of the provisions from which derogation is requested. During the derogation process the TSO requesting derogation shall be deemed compliant with the provision from which derogation is requested.
5. Derogation shall be granted once and for a maximum period of two years.
6. The request for derogation shall include all the following information and documents:
  - (a) provisions for which derogation is requested;
  - (b) requested derogation period;
  - (c) a detailed plan and timeline specifying how the TSO requesting derogation intends to address the underlying reasons and intends ensure the implementation of the concerned provisions of this Network Code after expiration of the derogation period;
  - (d) assessment of the consequences of requested derogation on adjacent markets; and
  - (e) assessment of the possible jeopardies for the integration of Balancing Markets across Europe caused by the requested derogation.
7. No later than six months following the reception of request for derogation, the NRA shall decide on whether to grant the derogation or not. In assessing the request for derogation, the NRA shall consider the following aspects:
  - (a) difficulties of implementing the concerned provisions due to the specificities of the situation of the TSO seeking the derogation, in terms of national Balancing arrangements; as well as risks and implications of the concerned provisions, in terms of Operational Security;
  - (b) actions taken by the TSO seeking the derogation to facilitate the implementation of the concerned provisions;
  - (c) impacts of non-implementation of the concerned provisions, in terms of non-discrimination and competition with other European Market Participants, in particular as regards Demand Side Response and renewable sources of energy;
  - (d) impacts on overall Social Welfare; and
  - (e) impacts on other Responsibility Areas and overall consequences on European market integration process.
8. The NRA shall notify the Agency of the reception of requests for derogation.
9. The NRA shall notify the Agency and the European Commission of their decision with respect to requests for derogation and publish it on its web page.
10. The NRA shall create and operate a register in which derogations are recorded, together with the reasons for their granting and the consequences of the derogations.

## **CHAPTER 9 FINAL PROVISIONS**

### **Article 71 ENTRY INTO FORCE**

1. This Network Code shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Union.
2. This Network Code shall be binding in its entirety and directly applicable in all Member States.