

# ENTSO-E Draft Network Code on Electricity Balancing

**Version 1.14**

**20 February 2013**

## ***Notice***

This document is an early work-in-progress document reflecting the status of ongoing work by TSO experts as of 20 February 2013, based on the ACER Framework Guidelines on Electricity Balancing published on 18 September 2012, as well as the input received in the frame of an extensive informal dialogue with stakeholders.

This early work-in progress document is subject to amendments and therefore cannot be considered as representing a firm, binding and definitive ENTSO-E position on the contents and structure of the “Network Code on Electricity Balancing”.

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 draft Regulation on Submission and Publication of Data in Electricity Markets being developed in concurrent timescales to this Network Code,

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 within a European Network of Transmission System Operators for Electricity (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) Transmission System Operators (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 Transmission System Operators, National Regulatory Authorities and Market Participants in order to contribute to non-discrimination, effective competition and the efficient functioning of the internal electricity market and to ensure system 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 contributing to non-discrimination, effective competition, completion and efficient functioning of the internal market in electricity and cross-border trade, security of supply, providing benefits for customers, participation of demand 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.

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. This will involve the establishment of common principals for procurement and common methodology for the activation of Frequency Containment Reserves, Frequency Restoration Reserves and Replacement Reserves, the activation of Balancing Energy from Frequency Restoration Reserves and Replacement Reserves and Settlement.
2. The requirements set forth by this Network Code shall apply to Transmission System Operators, National Regulatory Authorities, the Agency, Distribution System Operators and Market Participants.

### Article 2

#### DEFINITIONS

1. For the purpose of this Network Code, the definitions contained in Article 2 of Directive 2009/72/EC and in Article 2 of Regulation (EC) N°714/2009 apply. The definitions contained in the Article 2 of the Network Codes on Requirements for Grid Connection applicable to all Generators, Capacity Allocation and Congestion Management, Demand Connection, Operational Security, Operational Planning and Scheduling, and Load-Frequency Control and Reserves, and Forward Capacity Allocation shall also apply.
2. The following definitions shall apply:

**Activation of Balancing Energy**

**Activation Time**

**Additional Energy Bids / Energy Only Bids**

**Adjustment**

**Allocated Volume**

**Allocation/Capacity Allocation**

**Annual Report**

**Activation Optimisation Algorithm**

**Activation Optimisation Function**

**Area Process Obligations**

**Area Monitor of a Type C or Type D Area**

**Balancing Responsible Party**

**Balancing Service Provider**

**Balancing**

**Balancing Algorithm**

**Balancing Area**

**Balancing Energy**

**Balancing Energy Bids**

**Balancing Energy Gate Closure Time**

**Balancing Market**

**Balancing Reserve Bids**

**Balancing Reserves**

**Balancing Reserves Gate Closure Time**

**Balancing Services**

**Balancing Timeframe**

**Basic Volume**

**Bidding Zone**

**Capacity Calculation Region**

**Capacity Calculator Function**

**Central Dispatch Systems**

**Collateralisation of Reserves**

**Common Grid Model**

**Common Merit Order List**

**Connecting TSOs**

**Coordinated Balancing Area**

**Co-optimisation Process**

**Cost-Benefit Analysis**

**Counteracting Activation Minimisation Function**

**Cross-border Balancing**

**Cross-border (Transmission) Capacity**

**Cross-border Frequency Restoration Activation Process**

**Cross-border Reserve Replacement Activation Process**

**Cross Zonal Capacity**

**Cross Zonal Capacity Reservation**

**Day-Ahead**

**Deactivation Time**

**Delivery Period**

**Demand Response**

**Economic Surplus**

**Emergency Situation**

**Exchange of Balancing Energy**

**Exchange of Balancing Services**

**Exchange of Balancing Reserves**

**Firm/Firmness**

**Flexible RR**

**Frequency Containment Reserves**

**Frequency Restoration Process**

**Frequency Restoration Reserves**

**Full Activation Time**

**Gate Closure Time**

**Gate Closure Time of Transmission System Operator Energy Bid Submission**

**Imbalance Direction**

**Imbalance Netting Function**

**Imbalance Netting Power**

**Imbalance Netting Process**

**Imbalance Price**

**Imbalance Settlement**

**Imbalance Settlement Function**

**Imbalance Settlement Period**

**Imbalance Volume**

**Imbalances**

**Interconnector**

**Intraday**

**Intraday Cross Zonal Gate Closure Time**

**Intraday Cross Zonal Gate Opening Time**

**Intraday Energy Gate Closure Time**

**Intraday Energy Gate Opening Time**

**Local Procurement Platform**

**Market Time Period**

**Matching**

**Matching Time**

**Merit Order List**

**Mode of Activation**

**Negative FRR**

**Netting of Imbalances**

**Not Shared Bids**

**Operational Reserves**

**Period Linked RR**

**Positive Balancing Bid**

**Pre-contracted Energy Bids**

**Pre-qualification (Stage)**

**Probabilistic Approach**

**Procurement of Balancing Reserves**

**Program Time Unit**

**Ramp Rate Process**

**Ramping Period**

**Relevant Area**

**Relevant Regulatory Authority**

**Reliability Margin**

**Relieve Time of FRR**

**Replacement Reserves**

**Requesting TSOs**

**Reserve Capacity**

**Reserves Obligations**

**Reserve Procurement Optimisation Function**

**Reserve Replacement Process**

**Set Point Frequency**

**Settlement**

**Settlement Time Period**

**Sharing of Balancing Services**

**Sharing of Balancing Reserves**

**Shipping Agent**

**Social Welfare**

**Specific Products**

**Stakeholder Committee**

**Standard Products**

**Synchronous Area**

**Tariff Period**

**Transmission System Operators**

**TSO-TSO Settlement Function**

**Unintentional Deviations**

**Unshared Bids**

**Virtual Tie-Line**

**Article 3**  
**REGULATORY ASPECTS**

1. The requirements established in this Network Code and their applications are based on the principle of non-discrimination and transparency as well as the principle of optimisation between the overall efficiency and, total cost for all involved parties.
2. Notwithstanding the above, the application of the non-discrimination principle and the principle of optimisation between the overall efficiency and total costs for all involved parties shall be balanced with the aim of achieving transparency in issues of interest for the market and the assignment to the real originator of the costs.

**Article 4**  
**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 National Regulatory Authorities.
2. Costs assessed as efficient, reasonable and proportionate shall be recovered as determined by National Regulatory Authorities
3. If requested to do so by National Regulatory Authorities, regulated Network Operators shall, within three months of such a request, use best endeavours to provide such additional information as reasonably requested by National Regulatory Authorities to facilitate the assessment of the costs incurred.

**Article 5**  
**CONFIDENTIALITY OBLIGATIONS**

1. All entities referred to in Article 1(2) shall preserve due confidentiality of the 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 entity referred to in Article 1(2) shall provide to the operator of any other transmission system with which its system is interconnected, sufficient information to ensure the secure and efficient operation, coordinated development and interoperability of the interconnected system.

**Article 6**  
**CONSULTATION**

1. The following shall be publically consulted on for a period of at least four weeks by the party responsible for developing the following proposals:
  - (a) terms and conditions related to Balancing pursuant to Article 13 [TERMS AND CONDITIONS RELATED TO BALANCING];
  - (b) the list of standard Balancing Energy and Balancing Reserve products pursuant to Article 14 [REQUIREMENTS FOR STANDARD PRODUCTS];

- (c) common pricing methods within a Coordinated Balancing Area of Balancing Reserve products pursuant to Article 20(3);
  - (d) amendments to the applicable pricing method of each Exchanged or Shared Balancing Reserve product pursuant to Article 20,
  - (e) the common pricing method for Balancing Energy products pursuant to Article 22 [GENERAL PROVISIONS];
  - (f) the definition of an amount of Unshared Bids pursuant to Article 23 [GENERAL PROVISIONS];
  - (g) a proposal for the Activation Optimisation Function pursuant to [OPTIMISATION PRINCIPLES OF ACTIVATION FROM COMMON MERIT ORDER LIST]
  - (h) capacity provision methodologies for Balancing Services pursuant to Article 30 [CAPACITY PROVISION METHODOLOGIES FOR BALANCING SERVICES];
  - (i) a proposal for the Balancing Algorithm as pursuant to Article [BALANCING ALGORITHM DEVELOPMENT];
  - (j) the proposal on the target model for the exchanges of Balancing Energy from automatically activated Frequency Restoration Reserves pursuant to Article [TARGET];
  - (k) a proposal for modification pursuant to Article [TARGET];
  - (l) a proposal for the implementation of the transitional arrangements pursuant to Article [TARGET]; and
  - (m) the methodology for the Cost-Benefit Analysis as pursuant to Article [COST-BENEFIT ANALYSIS].
2. The views of stakeholders emerging from the consultations undertaken pursuant to paragraph 1 shall be duly considered by the party to whom the obligation is addressed prior to the submission of the document 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 7 REGULATORY APPROVAL**

1. The items specified in paragraphs 2 to 4 shall be treated in a manner consistent with Article 37 of Directive 2009/72/EC.
2. The following shall be subject to approval by all National Regulatory Authorities:
  - a) the proposals for standard Balancing Energy and Balancing Reserve products pursuant to Article 14 [REQUIREMENTS FOR STANDARD PRODUCTS];
  - b) the common pricing method and subsequent revisions for Balancing Energy products pursuant to Article 22 [GENERAL PROVISIONS];
  - c) the methodologies for the creation of a common function for the Activation of Balancing Energy as pursuant to Article 23 [GENERAL PROVISIONS];
  - d) the necessary Common Merit Order Lists as pursuant to Article 26 [OPTIMISATION PRINCIPLES OF ACTIVATION FROM COMMON MERIT ORDER LIST];
  - e) the Balancing Algorithm developed as pursuant to Article [BALANCING ALGORITHM DEVELOPMENT];
  - f) any amendment to the Balancing Algorithm as pursuant to Article [BALANCING ALGORITHM AMENDMENT];

- g) the proposal of the target model for the exchanges of Balancing Energy from automatically activated Frequency Restoration Reserves, pursuant to Article [TARGET];
  - h) the proposal for modification of the features of the target model for the exchanges of Balancing Energy from manually activated Frequency Restoration Reserves and Replacement Reserves, pursuant to Article [TARGET]; and
  - i) the criteria and methodology for the Cost-Benefit Analysis as pursuant to Article [COST-BENEFIT ANALYSIS].
3. The following shall be subject to approval by each Relevant Regulatory Authority of the concerned Coordinated Balancing Area:
- a) all proposals for Coordinated Balancing Areas pursuant to Article 10 [COORDINATED BALANCING AREA];
  - b) the methodologies used to calculate or establish the terms and conditions for the provision of Balancing Services as pursuant to Article 13(1) [TERMS AND CONDITIONS RELATED TO BALANCING];
  - c) proposals to combine procurement and accept additional bids linking Upwards and Downwards Balancing Reserve products pursuant to Article 19;
  - d) common pricing methods within a Coordinated Balancing Area of Balancing Reserve products pursuant to Article 20(3);
  - e) amendments to the applicable pricing method of each Exchanged or Shared Balancing Reserve product pursuant to Article 20;
  - f) the change proposal of the common pricing method of the Balancing Energy product(s) pursuant to Article 22(3) [GENERAL PROVISIONS];
  - g) proposals for amendments to the rules for updating Balancing Energy Bids as pursuant to Article 22; and
  - h) the capacity provision and pricing methodologies for Balancing Services pursuant to Article 30 [CAPACITY PROVISION METHODOLOGIES FOR BALANCING SERVICES]; and
  - i) amendments to the reservation methodology.
4. The following shall be subject to approval by each National Regulatory Authority of the Member States concerned, as determined on a case-by-case basis:
- a) the terms and conditions related to Balancing pursuant to Article 13(2) [TERMS AND CONDITIONS RELATED TO BALANCING];
  - b) the application by a Transmission System Operator to offer the Balancing Services if system security is threatened due to insufficient bids from Balancing Service Providers as pursuant to Article 11 [ROLE OF THE TSOS];
  - c) the proposal to oblige Balancing Responsible Parties to provide balanced programs in the Day-Ahead timeframe pursuant to Article 13 [TERMS AND CONDITIOND RELATED TO BALANCING];
  - d) terms and conditions on procurement of Balancing Services pursuant to Article 13 [TERMS AND CONDITIONS RELATED TO BALANCING];
  - e) the existence and use of Specific Products pursuant to Article 14 and Article 15 [THE USE OF STANDARD PRODUCTS];
  - f) the selection and conversion of bids pursuant to Article 16 [SELECTION AND CONVERSION OF PRODUCTS];
  - g) the application by a Transmission System Operator for a combined procurement and to accept additional bids linking upward and downward bids as pursuant to Article 19 [GENERAL PROVISIONS];
  - h) the application by a Transmission System Operator for a contract on Balancing Reserves longer than twelve consecutive months and earlier than twelve months

- before the first Program Time Unit of the contract period as pursuant to Article 19 [GENERAL PROVISIONS];
- i) the application by a Transmission System Operator to require a Balancing Service Provider to offer unused generation capacity in the Balancing Markets as pursuant to Article 22 [GENERAL PROVISIONS];
  - j) rules for updating bids by Balancing Service Providers in Central Dispatch Systems pursuant to Article 22(9) [GENERAL PROVISIONS];
  - k) the definition of an amount of Unshared Bids pursuant to Article 23 [GENERAL PROVISIONS];
  - l) conditions for aggregation of, at least, small demand and/or generation units within a Relevant Area to offer Balancing Services;
  - j) Imbalance Settlement mechanisms, in particular:
    - the procedure to define Imbalance Volumes as pursuant to Article [IMBALANCE VOLUME CALCULATION];
    - the procedure to define Imbalance Prices as pursuant to Article [IMBALANCE PRICING]; and
    - the Imbalance Settlement Period as pursuant to Article [IMBALANCE SETTLEMENT PERIOD];
  - k) the application by a Transmission System Operator for a Settlement Period longer than 30 minutes as pursuant to Article 46 [IMBALANCE SETTLEMENT PERIOD];
  - m) the procedures for Settlement amendment as pursuant to Article [GENERAL PRINCIPLES]; and
  - n) the application for derogation in respect of one or more provisions of this Network Code as pursuant to Article [DEROGATIONS].
5. For each of the approvals specified in paragraphs 2 to 4, Transmission System Operators shall, prior to the expiry of the deadline for developing procedures for the provision of Balancing Services specified in this Network Code, submit those procedures, to the concerned National Regulatory Authority for approval. All submissions shall include a proposed timescale for implementation and a description of the expected impact of the procedure.
6. National Regulatory Authorities shall, after having received the proposals pursuant to paragraphs 1 to 5, provide Transmission System Operators with an approval or request to amend the proposals within:
- a) three months after having received a proposal if the approval process concerns only one National Regulatory Authority; and
  - b) six months after having received a proposal if the approval process concerns more than one National Regulatory Authority.
7. In the event that the concerned National Regulatory Authorities request an amendment to the proposals pursuant to paragraphs 1 to 5, Transmission System Operators shall resubmit an amended procedure for approval within three months.
8. Where the concerned National Regulatory Authorities have not been able to reach a decision within the period time pursuant to paragraph 6 of this article, each relevant National Regulatory Authorities shall inform the Agency. The Agency shall decide upon those regulatory issues that fall within the competence of National Regulatory Authorities as specified under Article 8 of Regulation (EC) No 713/2009.
9. Transmission System Operators shall implement the decision of National Regulatory Authorities by a date no later than the date specified in the decision.

## **Article 8**

### **PUBLICATION OF INFORMATION**

1. The items consulted upon according to Article 6(1) shall be made publically available after their approval, if regulatory approval is required, or after finalisation in all other cases by the party 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 party or category of party.
3. Each Transmission System Operator shall publish, at a minimum, the following information:
  - a) the terms and conditions of Balancing Services, in English, at least, and sufficiently in advance before the procurement starts, pursuant to Article 13 [Terms and Conditions related to Balancing];
  - b) the assessment for the activation compatibility from Standard Balancing Energy Products of different Merit Order Lists, pursuant to Article 26; and
  - c) information on Cross Zonal Capacity Reservation for each Market Time Period without undue delay before the Cross Zonal Gate Opening Time of the relevant timeframe, including the amount of Cross Zonal Capacity Reservation pursuant to Article 30 [CAPACITY PROVISION METHODOLOGIES FOR BALANCING SERVICES].
4. Each Transmission System Operator shall publish, at a minimum, the following information on Specific Products:
  - a) the volumes of Specific Products reserved in their Relevant Area;
  - b) the volumes of Specific Products activated in their Relevant Area;
  - c) the amount of Unshared Bids pursuant to Article 23 [GENERAL PROVISIONS];
  - d) a description of the functional requirements of any algorithm developed pursuant to Article [BALANCING ALGORITHM DEVELOPMENT];
  - e) information related to Cross Zonal Capacity Reservation as pursuant to Article 30 [CAPACITY PROVISION METHODOLOGIES FOR BALANCING SERVICES]; and
  - f) all information contained in the common Annual Report as pursuant to [ANNUAL REPORT].
5. Each Transmission System Operator shall publish the items referred to in this Article on the central information transparency platform, established pursuant to Article 3, of Regulation (EC) No.../. of XXX on the submission and publication of data in electricity markets.

## **CHAPTER 2**

### **THE ELECTRICITY BALANCING SYSTEM**

#### SECTION 1

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

#### **Article 9**

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

1. All entities referred to in Article 1(2) shall cooperate in fulfilling the obligations specified within this Network Code, in order to safeguard operational security, promote the completion and efficient functioning of the internal market in electricity and to ensure the optimal management, coordinated operation and sound technical evolution of the European electricity transmission system.
2. This Network Code shall facilitate the achievement of the following objectives:
  - (a) safeguarding operational security;
  - (b) fostering effective competition, non-discrimination and transparency in Balancing Markets;
  - (c) ensuring that the procurement of Balancing Services is fair, objective, transparent and market-based, fosters the liquidity of Balancing Markets, avoids undue entry barriers for new entrants and prevents undue distortions from within the internal market in electricity and especially between adjacent Coordinated Balancing Areas;
  - (d) facilitating the efficient functioning of other electricity markets, in time frames different from the Balancing Markets;
  - (e) facilitating wider participation of Demand Response and supporting the achievement of the EUs targets for penetration of renewable generation;
  - (f) increasing efficiency of the operation and functioning of Balancing Markets; and especially avoiding undue market fragmentation; promoting the Exchange of Balancing Services and Sharing of Balancing Services;
  - (g) providing benefits for consumers
  - (h) contributing to the efficient long-term operation and development of the European electricity Transmission System and electricity sector; and
  - (i) promoting the integration of renewable and intermittent energy sources in the Balancing Marketsin order to enhance pan-European Social Welfare.
3. In fulfilling the requirements of this Network Code, Transmission System Operators and National Regulatory Authorities shall use reasonable endeavours to exploit synergies drawing on experience gained through existing Balancing cooperation projects.

**Article 10**  
**COORDINATED BALANCING AREA**

1. Each Transmission System Operator shall cooperate with at least one other Transmission System Operator in the form of a Coordinated Balancing Area. Such cooperation shall comprise the Exchange of at least one Standard Balancing Energy Product.
2. All Transmission System Operators intending to cooperate in a Coordinated Balancing Area shall submit a common proposal detailing the products and all terms and conditions related to balancing, pursuant to Article 13 of this Network Code, of said cooperation to the Relevant Regulatory Authorities six months before the intended implementation date. Coordinated Balancing Areas declared for the Exchange of Balancing Reserves shall be consistent with Coordinated Balancing Areas for the Exchange of Balancing Energy for the same Balancing Service, and shall not exceed it except for the exchange of Frequency Containment Reserves. Each Transmission System Operator shall be entitled to submit the common proposal for a Coordinated Balancing Area to all National Regulatory Authorities regarded as relevant for the Coordinated Balancing Area in coordination with all other participating Transmission System Operators.
3. All Transmission System Operators of two or more interconnected Coordinated Balancing Areas shall be entitled to exchange all Balancing Services between these Coordinated Balancing Areas, which are already exchanged within these Coordinated Balancing Areas. Cooperation of Coordinated Balancing Areas in terms of exchange of Balancing Services between them shall be set in order to facilitate the achievement of the objectives established in Article 57 [TARGET] of this Network Code.
4. In case where the Exchange of Balancing Energy between two or more Transmission System Operators is expected to affect physical flow conditions in any third country significantly, all Transmission System Operators of the Coordinated Balancing Area shall notify each National Regulatory Authority and each Transmission System Operator of such country, not addressed in the proposal in accordance with paragraph 2 of this Article, the proposed Exchange of Balancing Services for acknowledgement.

**SECTION 2**  
**FUNCTIONS AND RESPONSIBILITIES**

**Article 11**  
**ROLE OF THE TRANSMISSION SYSTEM OPERATORS**

1. Transmission System Operators are responsible for organising European Balancing Markets and shall strive for their integration, keeping the system in balance in the most efficient manner and following the general objectives defined in Article 9 of this Network Code. To do so, they shall work with each other in close cooperation and shall coordinate their activities as much as necessary.
2. Each Transmission System Operator is responsible for procuring the Balancing Services from Balancing Service Providers to safeguard the operational security.
3. Transmission System Operators are not allowed to offer the Balancing Services themselves except, subject to the approval of the National Regulatory Authorities, if system security is threatened due to insufficient bids from Balancing Service Providers.

4. Transmission System Operators shall use best endeavours to facilitate the Exchange of Balancing Energy within a Coordinated Balancing Area and ensure its applicability.
5. All decisions by Transmission System Operators within a Coordinated Balancing Area, or any other cooperation between two or more Transmission System Operators dealing with the Exchange and Sharing of Balancing Services or Netting of Imbalances as stipulated in this Network Code, shall be unanimous.
6. Where Transmission System Operators are required to adopt a decision in accordance with this Network Code, all Transmission System Operators shall cooperate loyally to adopt the decision. ENTSO-E shall facilitate the adoption of such decisions.

## **Article 12**

### **FUNCTIONS IN COORDINATED BALANCING AREAS**

1. The cooperation processes in all Coordinated Balancing Areas shall involve the following functions:
  - (a) Counteracting Activation Minimisation Function;
  - (b) Reserve Procurement Optimisation Function, in case Balancing Reserves are exchanged;
  - (c) Activation Optimisation Function; and
  - (d) TSO-TSO Settlement Function.
2. Each Transmission System Operator shall be responsible to exercise these functions in the Relevant Area for which it is solely responsible in accordance with the Network Code on Load Frequency Control and Reserves.
3. Each Transmission System Operator shall be entitled to delegate the tasks pertaining to the functions listed in paragraph 1 of this Article to a competent third party while respecting the principles of transparency, proportionality and non-discrimination. In order to do so, following principles shall be met:
  - (a) the delegating Transmission System Operator shall monitor the compliance with delegated tasks;
  - (b) the delegating Transmission System Operator shall ensure that suitable confidentiality arrangements have been put in place prior to delegation;
  - (c) the party to which the task is to be delegated shall have clearly demonstrated its ability to perform the delegated tasks; and
  - (d) all Transmission System Operators of a Coordinated Balancing Area shall be entitled to delegate more than one function to the same party.

## **Article 13**

### **TERMS AND CONDITIONS RELATED TO BALANCING**

1. No later than x months after the entry into force of this Network Code all Transmission System Operators of a Coordinated Balancing Area shall develop a methodology for the establishment of the terms and conditions related to Balancing. This methodology shall ensure a sufficient level of coordination between all Transmission System Operators of the Coordinated Balancing Area in order to foster effective competition.
2. The terms and conditions related to Balancing shall facilitate the achievement of the objectives of the Balancing Market as defined in Article 9 of this Network Code, and shall:

- (a) allow for the aggregation of, at least, small demand and/or generation units within a Relevant Area to offer Balancing Services;
  - (b) allow for load entities, whether through aggregators or not, and generation units from conventional, renewable and intermittent energy sources as well as storage elements to become Balancing Service Providers subject to the fulfilment of the requirements according to paragraph 2(a);
  - (c) facilitate the participation of demand, renewable and intermittent energy sources in the Balancing Markets; and
  - (d) oblige all Balancing Service Providers to appoint at least to one Balancing Responsible Party financially responsible for its Imbalances.
3. Each Transmission System Operator shall monitor the fulfilment of the requirements set in the terms and conditions related to Balancing in its Relevant Area by all parties subject to those terms and conditions.
4. No later than six months after the approval of the methodology for the establishment of the terms and conditions related to Balancing in a Coordinated Balancing Area, each Transmission System Operator shall define the terms and conditions related to Balancing based on this methodology. These terms and conditions related to Balancing shall consist of reasonable and justified requirements and shall at least contain:
  - (a) technical and contractual requirements for Balancing Service Providers;
  - (b) technical and contractual requirements for Balancing Responsible Parties;
  - (c) terms and conditions for procurement of Balancing Services, in accordance with [CHAPTER 3 OR TO BE DEFINED];
  - (d) the requirement that Balancing Responsible Party shall be financially responsible for the Imbalance Volume to be settled with the Connection Transmission System Operator;
  - (e) the requirement that Balancing Responsible Parties and Balancing Service Providers shall provide all necessary data and information needed by the Connection Transmission System Operator and/or Distribution System Operator to evaluate provided Balancing Services, Balancing service needs and calculate Imbalance Volumes;
  - (f) the conditions for the aggregation of small demand and/or generation units within a Relevant Area to become a Balancing Service Provider;
  - (g) data and information required by the Connection Transmission System Operator and/or Distribution System Operator to be provided by Balancing Service Providers at both Pre-qualification Stage and real-time operation;
  - (h) detailed modalities of collateralisation;
  - (i) rules for the Settlement as a consequence of the processes referred to in this Network Code in accordance with [TO BE COMPLETED]; and
  - (j) the modalities in case of non-compliance with requirements of Terms and Condition related to Balancing defined in accordance with this Article.
5. Each Transmission System Operator shall be entitled to launch a reassessment of the terms and conditions on the basis of their own judgment or following a request from its National Regulatory Authority. A reassessment shall be launched not earlier than one year after the previous assessment or reassessment.
6. Each Balancing Service Provider and all the Balancing Responsible Parties to which this Balancing Service Provider is associated shall belong to the same Relevant Area where the Imbalance Volume is calculated.

7. Each Connection Transmission System Operator shall be entitled to oblige Balancing Responsible Parties without physical injections or withdrawals to provide balanced Position in the Day-Ahead timeframe,
8. Each Balance Responsible Party shall be entitled to change their position in the Intraday timeframe until the relevant Gate Closure Time. Any modification of this schedule shall be submitted to the Connection Transmission System Operator.

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## **CHAPTER 3**

### **PROCUREMENT OF BALANCING SERVICES**

#### SECTION 1 **GENERAL PROVISIONS FOR PROCUREMENT**

#### **Article 14** **REQUIREMENTS FOR STANDARD AND SPECIFIC PRODUCTS**

1. No later than twelve months after entry into force of this Network Code, all Transmission System Operators shall prepare a common initial proposal for standard Balancing Reserve and Energy products.
2. All Transmission System Operators shall review the characteristics of standard Balancing Reserve and Energy products regarding their adequacy with system needs. In case all Transmission System Operators update these characteristics, they shall submit an update proposal for standard Balancing Service products to the Agency and all National Regulatory Authorities.
3. All proposals from all Transmission System Operators to define standard Balancing Reserve and Energy products shall:
  - (a) include a public consultation with market participants as required in Article 6 of this Network Code; and
  - (b) be submitted to the Agency and all National Regulatory Authorities as required in Article 7 of this Network Code.
4. The standard Balancing Reserve and Energy products shall consist of at least the following standard characteristics:
  - (a) Full Activation Time;
  - (b) minimum and maximum quantity;
  - (c) Deactivation Time;
  - (d) Price of the bid;
  - (e) divisibility;
  - (f) delivery period; and
  - (g) Mode of Activation.
5. Standard Balancing Reserve and Energy products shall:
  - (a) satisfy the needs of all Transmission System Operators of a Coordinated Balancing Area in order to safeguard operational security; and
  - (b) allow participation of the load, energy storage facility and generation including renewables entities to become a Balancing Service Provider, aggregated or not; and
  - (c) follow the rules defined in the Network Code for Load Frequency Control and Reserves.
6. Each Transmission System Operator shall be entitled to define and use Specific Products. The following requirements shall be then respected:
  - (a) in combination with Standards Products, the Specific Products shall enable the Transmission System Operator requesting the use of Specific Products to meet the system balance and System Security requirements;
  - (b) the Specific Products defined shall not create significant inefficiencies and distortions in national market or in the Coordinated Balancing Area;

- (c) Specific Products shall be visible for other Transmission System Operators of the Coordinated Balancing Area; and
- (d) information concerning the Specific Products volumes available, used and possible distortions or inefficiencies in the balancing markets shall be published in the Annual report.

#### **Article 15**

#### **THE USE OF STANDARD AND SPECIFIC PRODUCTS**

1. Each Transmission System Operator shall use relevant Standard Products and Specific Products when available in order to:
  - (a) maintain system balance in the respect of Load Frequency Control and Reserves Network Code; and
  - (b) safeguard operation security.

#### **Article 16**

#### **SELECTION AND CONVERSION OF PRODUCTS**

1. Where Transmission System Operators use Specific Products for the Balancing of the system, they shall be entitled to submit these Specific Products into the common procurement of Balancing Services, provided these are converted into a Standard Product exchanged in the relevant Coordinated Balancing Area.
2. Transmission System Operators operating in Central Dispatch Systems shall select and, if necessary, convert the bids into Standard Products submitted by Balancing Service Providers taking into account their technical availability for the Exchange of Balancing Services.
3. The process of selecting and converting bids as defined in this Article shall be fair, transparent and non-discriminating.

#### **Article 17**

#### **FIRMNESS OF PRODUCTS**

1. Volumes of Balancing product bids given by a Balancing Service Provider shall be firm after the Gate Closure Time defined for the relevant Balancing product. Unexpected unavailable volumes (due to failure) of a Balancing Service Provider unit after the Gate Closure Time shall be reported to the Connection Transmission System Operator without delay. Connection Transmission System Operators shall have the right to qualify such bids as invalid within the relevant Common Merit Order List.
2. Gate Closure Time for Balancing products shall take into account operational security, the Gate Closure Times of the other cross-border energy markets and it shall promote the market liquidity.
3. In case of activation of Balancing products by a Transmission System Operator, even prior or after Gate Closure Time for Balancing products, the activated Balancing products shall be considered as firm.

**Article 18**  
**FALLBACK PROCEDURES**

1. Each Transmission System Operator shall ensure that robust and timely fall-back solutions are in place to ensure efficient, transparent and non-discriminatory functioning of the procurement and activation of Balancing Services in the event that normal procedures fail.
2. In the event that the procurement of Balancing Services fails prior to the activation period, all Transmission System Operators of a Coordinated Balancing Area shall foresee, if possible, a repetition procedure in order to enable a market-based contracting to the greatest possible extent. Transmission System Operators shall use their best endeavours to inform market participants that fall-back procedures are used as soon as reasonably practicable. In the event the coordinated activation of Balancing Energy fails due to technical reasons, Transmission System Operators may bypass the Common Merit Order List activation.
3. The use of fall-back procedures shall not affect a Transmission System Operator's right to perform any necessary actions to ensure system security according to the Network Code for Operational Security and national legislation.

**SECTION 2**  
**PROCUREMENT OF BALANCING RESERVES**

**Article 19**  
**GENERAL PROVISIONS**

1. Each Balancing Service Provider shall submit its Balancing Reserve Bids to its Connection Transmission System Operator.
2. Each Transmission System Operator shall consider all Balancing Reserve Bids respecting terms and conditions related to Balancing in the procurement of Balancing Reserves.
3. Each Transmission System Operator shall be entitled to conclude a contract for a longer period than twelve months and earlier than twelve months before the first Program Time Unit of the contract period upon approval of its National Regulatory Authority. Timing for such process is defined in Article [xxx].
4. The terms and conditions on procurement of Balancing Reserves shall establish that the procurement of Upwards and Downwards Balancing Reserves is done through separated processes, except for Frequency Containment Reserves. Notwithstanding that, each Transmission System Operator shall, be entitled to combine procurement and accept additional bids linking Upwards and Downwards Balancing Reserve products if:
  - (a) it can be demonstrated that combination of Upwards and Downwards Balancing Reserve bids improves Social Welfare; and
  - (b) combined procurement does not hinder participation of Demand Response in the procurement of Balancing Reserves.
5. A Balancing Service Provider shall be entitled to transfer its obligations to deliver a Balancing Reserve to one or more Balancing Service Providers in order to fulfil its Balancing obligations. In such event the following shall be taken into account:
  - (a) the Balancing Service Provider shall be entitled to transfer its obligations to deliver a Balancing Reserve to one or more Balancing Service Providers in shorter timeframes;
  - (b) the transfer of obligations shall be authorized within a Coordinated Balancing Area;

- (c) except for Frequency Containment Reserves, sufficient Cross Zonal Capacity shall have been provided in accordance with Article 27 of this Network Code;
  - (d) both collateralised and collateralising Balancing Service Providers shall notify the collateralisation to their respective Connection Transmission System Operator; and
  - (e) the collateralising Balancing Service Provider is liable to comply with rights and duties to which it has committed to.
6. The Reserve Procurement Optimisation Function shall select the combination of bids giving the lowest possible procurement cost respecting the operational security constraints of other Network Codes, by at least taking into account:
- (a) limits for the sharing and exchange of Balancing Reserves, pursuant to the Network Code Load-Frequency Control and Reserves;
  - (b) costs of ensuring sufficient availability of transmission capacity; and
  - (c) other elements limiting the exchangeable volumes of Balancing Reserves, where justified.
7. In case, where all Transmission System Operators of a Coordinated Balancing Area intend to implement a secondary market for the collateralisation of Balancing Reserves, the following principles shall be respected:
- (a) only one single secondary market shall be established per Coordinated Balancing Area and Standard Product;
  - (b) the terms and conditions related to Balancing of all Transmission System Operators of the Coordinated Balancing Area shall allow for collateralisation between to Relevant Areas;
  - (c) the processes and obligation of the secondary market apply a TSO-TSO Model;
  - (d) transmission capacity is provided pursuant to Article 28; and
  - (e) the matching of bids shall respect all technical constraints applied in accordance with Article 26.

### SECTION 3

## EXCHANGE AND SHARING OF BALANCING RESERVES

### Article 20

#### GENERAL PROVISIONS

1. In accordance with the general objectives of this Network Code set forth in Article 9, each Transmission System Operator has the right to decide for Exchange or Sharing of Balancing Reserves, respecting the Network Code on Load Frequency Control and Reserves and the CHAPTER 4 of this Network Code. Each Transmission System Operator is entitled to combine the Exchange and Sharing of Balancing Reserves.
2. All Balancing Service Provider shall be allowed to submit and update their Balancing Reserve Bids to the Connection Transmission System Operator until the Balancing Reserves Gate Closure Time.
3. All Transmission System Operators within a Coordinated Balancing Area Exchanging or Sharing Balancing Reserves shall develop a pricing method for Balancing Reserves, which shall:
  - (a) ensure an economically efficient use of all Balancing resources, including Demand Response, renewable and intermittent energy sources subject to operational security limits;
  - (b) give correct price signals and right incentives to market participants;

- (c) ensure that there are no significant distortions between adjacent Coordinated Balancing Areas; and
  - (d) enable Balancing Service Providers to participate in market based Procurement of Balancing Reserves.
4. All Transmission System Operators of a Coordinated Balancing Area shall be entitled to propose to the Relevant Regulatory Authorities amendments to the applicable pricing method of each Exchanged or Shared Balancing Reserve product,

**Article 21**  
**PROCUREMENT OF BALANCING RESERVES**

1. Through the Exchange of Balancing Reserves, a Transmission System Operator shall be entitled to procure part of its Balancing Reserves obligations given by the Network Code on Load Frequency Control and Reserves within a Coordinated Balancing Area.
2. A Balancing Service Provider shall submit its Balancing Reserve Bids to the Connection Transmission System Operator in which the Balancing Service Provider is associated with a Balancing Responsible Party.
3. Each Transmission System Operator of a Coordinated Balancing Area for the Exchange of Balancing Reserves shall submit all Balancing Reserve Bids compliant with the terms and conditions related to Balancing as specified with Article 13 of this Network Code to the Reserve Procurement Optimisation Function. Connection Transmission System Operators shall not modify or withhold bids from Balancing Service Providers.
4. Selected Balancing Service Providers shall be acknowledged about concluded contracts according to the terms and conditions related to Balancing by the Connection Transmission System Operator without undue delays.
5. Sharing of Frequency Restoration Reserves shall be envisaged between adjacent Transmission System Operators and supported by Cost-Benefit Analysis pursuant to Article 58 if required by relevant National Regulatory Authority.

**SECTION 4**  
**PROCUREMENT OF THE BALANCING ENERGY**

**Article 22**  
**GENERAL PROVISIONS**

1. All Transmission System Operators shall harmonise the pricing method for Balancing Energy products, which shall:
  - (a) ensure an economically efficient use of Demand Response and other Balancing resources subject to operational security limits;
  - (b) give correct price signals and incentives to market participants; and
  - (c) enable Balancing Service Providers to establish a market based bid pricing.
2. No later than twelve months after the entry into force of this Network Code, all Transmission System Operators shall develop an initial proposal for the pricing method of Balancing Energy products and submit it to the Agency and all National Regulatory Authorities. The initial pricing method shall be based on marginal pricing (pay-as-cleared), unless Transmission

System Operators provide all National Regulatory Authorities with a detailed analysis demonstrating that a different pricing method is more efficient for EU-wide implementation in pursuing the general objectives defined in Article 9 of this Network Code.

3. After the entry into force of the pricing method of Balancing Energy products as foreseen in paragraph 2, each Transmission System Operator shall be entitled to propose a change to the pricing method of the Balancing Energy products for which the Transmission System Operator does not participate in a Coordinated Balancing Area.
4. After entry into force of the pricing method of Balancing Energy products as foreseen in paragraph 2, all Transmission System Operators shall be entitled to propose a change to the pricing method of Balancing Energy products.
5. Subject to its National Regulatory Authority' approval, each Transmission System Operator shall be authorised to require information on unused generation capacity and other Balancing resources from Balancing Service Providers after Day-Ahead and Intraday Gate Closure Time.
6. Subject to its National Regulatory Authority' approval, each Transmission System Operator shall be authorised to require Balancing Service Providers to offer their unused generation capacity or other balancing resources through bids in the Balancing Markets after day-ahead and Intraday Gate Closure Time.
7. Balancing Service Providers with a contract for Reserves shall submit one or more bids for at least the contracted volume on the corresponding Balancing energy market.
8. All Balancing Service Providers shall be allowed to submit and update their Balancing Energy Bids until the Balancing Energy Gate Closure Time. Standard Balancing Energy Products cannot be activated prior to the Balancing Energy Gate Closure Time.
9. Each Transmission System Operator of a Central Dispatch System shall be entitled to propose amendments to the rules for updating Balancing Energy Bids set forth in this Article.

## SECTION 5

### ACTIVATION OF THE BALANCING ENERGY

#### Article 23

#### GENERAL PROVISIONS

1. No later than specified in Article 57 all Transmission System Operators of a Coordinated Balancing Area shall establish an Activation Optimisation Function and define rules for its operation.
2. In any case where the activation of Balancing Energy for balancing purposes deviates from the merit order activation mechanism shall be reported by the Connection Transmission System Operators in due time and in the Annual Report pursuant to Article 55.
3. The Activation of Balancing Energy by all Transmission System Operators of a Coordinated Balancing Area through the means set forth in Article 25 shall entail the acceptance of a firm bid for Balancing Energy by the requesting Transmission System Operator. Such acceptance qualifies activated Balancing Energy for Settlement.

4. The Exchange of Balancing Energy shall be based on a TSO-TSO Model.
5. All Transmission System Operators of each Coordinated Balancing Area shall cooperate closely to ensure the compatibility of the methodologies developed and applied pursuant to this Network Code and the efficient convergence of Coordinated Balancing Areas for Balancing Energy Exchange.
6. All Transmission System Operators shall monitor the compatibility between Coordinated Balancing Areas. Where incompatibilities between Coordinated Balancing Areas for Balancing Energy Exchange are identified, all Transmission System Operators shall report these to the Agency.
7. Only within one Coordinated Balancing Area Balancing Service Providers are allowed to provide Standard Products or specific Balancing Products for the Exchange of Balancing Energy and Balancing Reserves.
8. Each Transmission System Operators of a Coordinated Balancing Area shall submit all necessary data for the operation of the Activation Optimisation Algorithm to the Activation Optimisation Function.
9. Each Transmission System Operator shall be entitled to define an amount of Unshared Bids, whereas:
  - (a) the amount of unshared bids shall not be higher than the Reserve Capacity;
  - (b) unshared bids shall be the most expensive available bids;
  - (c) the amount of unshared bids shall be justified;
  - (d) the unshared bids volumes shall be yearly updated; and
  - (e) the unshared bids volumes shall not be defined longer than the entry in force of the European-wide TSO-TSO model with Common Merit Order List defined in Article 57 [Target] of this code.
10. Each Transmission System Operator has to submit to the Activation Optimisation Function at least as many bids to cover the volume for Frequency Restoration Reserve and/or Replacement Reserve based on the determination requirements as foreseen in Network Code Load Frequency Control and Reserves.
11. Each Transmission System Operator shall be entitled to request Balancing Energy from other Transmission System Operators of the same Coordinated Balancing Area up to the total volume of all Balancing Energy Bids submitted to the Activation Optimisation Function by the requesting Transmission System Operator. This shall not be applicable in case the requesting Transmission System Operator has declared an Emergency State. In case where at least two Transmission System Operators have declared an Emergency State, priority shall be given for the activation from the Transmission System Operator declaring an Emergency State, in the respective product timeframe.

#### **Article 24**

#### **AVOIDANCE OF COUNTERACTING ACTIVATION**

1. No later than two years after entry into force of this Network Code, Transmission System Operators of a Coordinated Balancing Area shall coordinate in order to minimise, when economically efficient, counteracting activation of Balancing Energy from automatically activated Frequency Restoration Reserves between Relevant Areas, taking into account

Cross-Border Capacities, respecting the conditions of Network Code Load Frequency Control and Reserves.

2. The Settlement between Transmission System Operators for Balancing Energy exchanged implicitly due to the netting of system imbalances shall be based on the prices of Balancing Energy. The Settlement shall ensure a non-discriminatory, fair, objective, transparent and market-based financial compensation for exchanged Balancing Energy.

## **Article 25**

### **ACTIVATION MECHANISM OF BALANCING ENERGY**

1. The Activation Optimisation Function shall optimise the activation of Balancing Energy Bids from the Common Merit Order Lists through a non-discriminatory, fair, objective and transparent mechanism by optimization of the use of Balancing resources and of the transmission infrastructure and minimizes the costs of Balancing whilst taking into account technical and network constraints.
2. A Common Merit Order List shall consist of Balancing Energy Bids from a standard Balancing Energy product as defined in Article 14 of this Network Code. All Transmission System Operators of a Coordinated Balancing Area shall define the necessary Merit Order Lists based on the Standard Products defined in Article 14 of this Network Code. Upward and downward Balancing Energy Bids shall be separated in different Common Merit Order Lists.
3. Each Activation Optimisation Function shall establish at least one Common Merit Order List for upward and one Common Merit Order List for downward Balancing Energy Bids.
4. Depending on the needed standard Balancing Energy products, Transmission System Operators are allowed to create more Common Merit Order Lists.
5. Each Transmission System Operator of a Coordinated Balancing Area shall submit all Standard Balancing Energy Bids compliant with the terms and conditions related to Balancing as specified in accordance with Article 13 of this Network Code to the Activation Optimisation Function until the Gate Closure Time of Transmission System Operator Energy Bid Submission. Transmission System Operators shall not modify or withhold bids from Balancing Service Providers, notwithstanding the exemptions set forth in Article 16 of this Network Code.
6. Each Transmission System Operator shall submit activation requests for Standard Balancing Energy Products to the Activation Optimisation Function.
7. The matched bids out of the Activation Optimization Function shall be activated by the Connection Transmission System Operators of the respective Coordinated Balancing Area or another responsible party as specified in the Network Code on Load Frequency Control and Reserves. The activated Balancing Service Providers are responsible to deliver the requested volume until the end of the delivery period.
8. The Activation Optimisation Function shall submit confirmation of activated bid to the Transmission System Operator requesting the activation of the bid.

## Article 26

### OPTIMISATION PRINCIPLES OF ACTIVATION FROM COMMON MERIT ORDER LIST

1. All Transmission System Operators shall establish an Activation Optimisation Function in accordance with Article 14 and Article 23 of this Network Code for the optimization of the activation from different merit order lists. The function shall define an assessment for the activation compatibility from Standard Balancing Energy Products of different Merit Order Lists. For all compatible Standard Balancing Energy Products from different Merit Order Lists out of the assessment the Activation Optimisation Function shall calculate a cost optimal activation taking at least into account:
  - (a) all Balancing Energy bids included in the compatible Common Merit Order Lists;
  - (b) submitted activation requests of all Transmission System Operators of a Coordinated Balancing Area;
  - (c) the available transmission capacity; and
  - (d) technical constraints.

## **CHAPTER 4**

### **USE, ALLOCATION AND RESERVATION OF CROSS ZONAL CAPACITY FOR BALANCING RESERVES**

#### **Article 27**

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

1. The use of Cross Zonal Capacity for the Exchange of Balancing Services and Sharing of Balancing Reserves by Transmission System Operators shall not endanger the secure operation of the system.
2. Cross Zonal Capacities provided in accordance with this section are firm under normal operating conditions as specified in the Network Code on Operational Security.
3. Each Transmission System Operator shall be entitled to use Cross Zonal Capacity for exchanging Balancing Services and Sharing of Balancing Reserves, in accordance with the methodology specified in Article 30 of this Network Code using the approaches specified in Article 29 of this Network Code , where Cross Zonal Capacity is:
  - (a) available after the Intraday Gate Closure Time; or
  - (b) provided for Balancing Services, in accordance with this Chapter.
4. The Provision of Cross Zonal Capacity for Exchanging Balancing Services and Sharing of Balancing Reserves shall be consistent with Cross Zonal Capacities as defined in the Network Code on Capacity Allocation and Congestion Management.
5. Allocated or reserved capacity for Exchanging Balancing Services and Sharing of Balancing Reserves shall be used exclusively for Balancing purposes.
6. Transmission System Operators shall not use Reliability Margins for Exchanging or Sharing of standard Balancing Services products except for Frequency Containment Reserves or in case a Transmission System Operator has declared an Emergency State. Where Frequency Containment Reserves are exchanged between Transmission System Operators, the Reliability Margin shall consider deviation of power flows caused by such exchange.

#### **Article 28**

##### **PRICING OF CROSS ZONAL CAPACITY FOR THE EXCHANGE OF BALANCING SERVICES OR SHARING OF BALANCING RESERVES**

1. Cross Zonal Capacities used, allocated or reserved for the Exchange of Balancing Services or Sharing of Balancing Reserves shall be priced in consistency with pricing methods for other purposes for similar timeframes.
2. Cross Zonal Capacity shall be priced in a manner which:
  - (a) reflects Market Congestion; and
  - (b) is based on actual bids for Balancing Services in the relevant timeframe.
3. For the exchange of Balancing Energy additional charges for losses can be charged if approved by relevant National Regulatory Authorities. Any additional charges for the use of Cross Zonal Capacity for Exchanges of Balancing Energy are forbidden for Transmission System Operators.

4. Twelve months before entry into force of the pricing mechanism, it shall be developed by all Transmission System Operators of a Coordinated Balancing Area and approved by all National Regulatory Authorities of the same Coordinated Balancing Area.

#### **Article 29**

##### **APPROACHES FOR THE PROVISION OF CROSS ZONAL CAPACITY FOR BALANCING SERVICES**

1. Transmission System Operators shall be entitled to apply the following approaches for providing Cross Zonal Capacity for Exchanging Balancing Services and Sharing of Balancing Reserves, safeguarding operational security and taking into account:
  - (a) Probabilistic Approach, where no capacity from energy markets needs to be used for it;
  - (b) Allocation of Cross Zonal Capacity through a Co-optimisation Process; or
  - (c) Reservation of Cross Zonal Capacity.

#### **Article 30**

##### **CAPACITY PROVISION METHODOLOGIES FOR BALANCING SERVICES**

1. All Transmission System Operators of a Coordinated Balancing Area shall develop common capacity provision and pricing methodologies for all Balancing Services exchanged or shared within the Coordinated Balancing Area.
2. The capacity provision methodologies for a Coordinated Balancing Area shall meet the objectives defined in Article 9 of this Network Code and shall contain at least the following elements for each Cross Zonal Capacity provision methodology:
  - (a) the relevant time frame;
  - (b) a process description; and
  - (c) the criteria for required Social Welfare improvements.
3. Every reservation of Cross Zonal Capacity for time frames longer than a month ahead shall be applicable to a specific Market Time Period.
4. For reservations of Cross Zonal Capacity for a specific Market Time Period for timeframes shorter than a month ahead, all Transmission System Operators of a Coordinated Balancing Area shall develop a simplified capacity provision methodology based on a Cost-Benefit Analysis, including the criteria for its application.

#### **Article 31**

##### **CALCULATION OF CROSS ZONAL CAPACITY FOR BALANCING RESERVES AND BALANCING ENERGY**

1. Allocated and reserved capacity for Exchange of Balancing Services and Sharing of Balancing Reserves shall be included in the calculations of Cross Zonal Capacity for later timeframes as previously Allocated Cross Zonal Capacity.
2. The Common Grid Model used in the Intraday timeframe shall form the basis for Common Grid Model used in the Balancing Timeframe. Special requirements for Balancing shall be included.
3. All Transmission System Operators of each Capacity Calculation Region as defined in Network Code on Capacity Allocation and Congestion Management shall ensure that Cross Zonal

Capacity is reassessed sufficiently often within the Balancing Timeframe based on the latest available information. A sufficient level of coordination between the coordinated Capacity Calculator Function of a Capacity Calculation Region and Activation Optimisation Function of the Coordinated Balancing Area shall be established by the concerned Transmission System Operators.

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# CHAPTER 5 SETTLEMENT

## SECTION 1 SETTLEMENT PRINCIPLES (GENERALITIES)

### Article 32 GENERAL SETTLEMENT PRINCIPLES

1. The general objective of Settlement is to:
  - (a) encourage Balancing Responsible Parties, Balancing Service Providers and Transmission System Operators to be balanced as close to the physical reality as possible and/or help the system to restore its balance in an efficient way;
  - (b) increase of the liquidity of the Balancing Markets;
  - (c) promote the delivery of Balancing Services by Balancing Service Providers;
  - (d) avoid perverse incentives to Balancing Responsible Parties, Balancing Service Providers and Transmission System Operators;
  - (e) increase of the Social Welfare
  - (f) support competition among market participants by creating a level-playing field and not unduly discriminate against participants without generation or demand;
  - (g) provide a fair distribution of the benefits and costs associated to the Balancing Markets; and
  - (h) establish adequate economic signals which reflect imbalance situation in a Coordinated Balancing Area, parts of a Coordinated Balancing Area or in a Relevant Area.
2. Each Transmission System Operator shall define Settlement mechanisms within the terms and conditions related to Balancing as defined in Article 13.
3. Each National Regulatory Authority shall ensure the neutrality of all Transmission System Operators under its jurisdiction with regard to the financial outcome as a result of the Balancing Energy Settlement processes described in this Network Code, over any period not longer than its Regulatory Period, but not shorter than a Settlement Time Period.
4. All TSO-TSO exchanges of Balancing Energy between Relevant Areas shall be subject to TSO-TSO Settlement in accordance to SECTION 3 of this Chapter.
5. All Balancing Energy procured by the Connection Transmission System Operator in its Relevant Area shall be subject to TSO-BSP settlements.
6. All injections and withdrawals within a Relevant Area other than those mentioned in paragraph 4 and paragraph 5 shall be subject to Imbalance Settlement.

SECTION 2  
**SETTLEMENT BALANCING ENERGY VOLUMES TSO-BSP**

**Article 33**  
**GENERAL PRINCIPLES**

1. Each Transmission System Operator shall establish a procedure for the calculation of Balancing Energy Volume by the Transmission System Operator, the challenging by the Balancing Service Provider of the calculated Balancing Energy Volume and the finalisation of the Balancing Energy Volume calculation by the Transmission System Operator, and the Balancing Energy Volume Settlement from at least Frequency Restoration Processes, and Reserve Replacement Processes.
2. A Balancing Energy Volume from the performing of Frequency Containment Processes, Frequency Restoration Processes, and Reserve Replacement Processes for an Imbalance Settlement Period, for each Relevant Area shall have a magnitude for each direction, with negative indicating Balancing Service Provider relative withdrawal, and positive indicating Balancing Service Provider relative injection.

**Article 34**  
**BALANCING ENERGY FROM FREQUENCY CONTAINMENT PROCESS**

1. Each Connection Transmission System Operator shall calculate a Balancing Energy volume to be settled with each Balancing Service Provider for each direction from Frequency Containment Process for each Imbalance Settlement Period, for each Relevant Area.
2. The Balancing Energy volume from Frequency Containment Reserves to be settled with each Balancing Service Provider shall be based on the deemed activated volumes of Frequency Containment Reserves for each direction.
3. The Balancing Energy from Frequency Containment Reserves to be settled with each Balancing Service Provider shall be priced for each direction.

**Article 35**  
**BALANCING ENERGY FROM FREQUENCY RESTORATION PROCESS**

1. Each Reserve Connection Transmission System Operator shall calculate a Balancing Energy volume to be settled with each Balancing Service Provider for each direction from Frequency Restoration Process for each Imbalance Settlement Period, for its Relevant Area.
2. The Balancing Energy from Frequency Restoration Reserve to be settled by the Connection Transmission System Operator with each Balancing Service Provider shall be based on the requested activation of Frequency Restoration Balancing Bids from the Balancing Service Provider for Frequency Restoration Process for each direction.
3. The Balancing Energy from Frequency Restoration Reserves to be settled with each Balancing Service Provider shall be priced for each direction in accordance with Article 22.

**Article 36**  
**BALANCING ENERGY FROM RESERVE REPLACEMENT PROCESS**

1. Each Reserve Connection Transmission System Operator shall calculate a Balancing Energy volume to be settled with each Balancing Service Provider for each direction from Reserve Replacement Process for each Imbalance Settlement Period, for each Relevant Area.
2. The Balancing Energy from Replacement Reserve to be settled by the reserve Connection Transmission System Operator with each Balancing Service Provider shall be based on the requested activation of Reserve Replacement Balancing Bids from the Balancing Service Provider for Reserve Replacement Process for each direction.
3. The Balancing Energy from Reserve Replacement to be settled with each Balancing Service Provider shall be priced for each direction in accordance with Article 22.

**Article 37**  
**IMBALANCE ADJUSTMENT TO BRP**

1. Each Transmission System Operator shall calculate for each Balancing Service Provider an Imbalance Adjustment for each Imbalance Settlement Period, for each Relevant Area to be applied to each Balancing Responsible Party declared to be associated with the Balancing Service Provider according to Article 13(6)
2. The Imbalance Adjustment for each Imbalance Settlement Period, for each Relevant Area shall be the net Balancing Energy volume calculated as a consequence of Frequency Containment Processes, Frequency Restoration Processes and Reserve Replacement Processes.

**SECTION 3**  
**SETTLEMENT EXCHANGED ENERGY VOLUMES BETWEEN TSOs**

**Article 38**  
**GENERAL PRINCIPLES**

1. Transmission System Operators shall settle among themselves in a transparent way all Balancing Energy exchanged between Relevant Areas.
2. No later than six months after the notification of a Coordinated Balancing Area, all Transmission System Operators of a Coordinated Balancing Area shall develop common rules for TSO-TSO Settlement of all energy exchanged between Relevant Areas, resulting from each of the following:
  - (a) Imbalance Netting Process;
  - (b) Cross-border Frequency Restoration Activation Process; and
  - (c) Cross-border Reserve Replacement Activation Process;
3. No later than XX months after the entry into force of this Network Code all Transmission System Operators shall develop common rules for TSO-TSO Settlement of all energy exchanged between Relevant Areas resulting from Unintentional Deviations.
4. No later than XX months after the entry into force of this Network Code Transmission System Operators exchanging energy through agreed Ramping Period or agreed Ramp Rate Process shall develop common rules for TSO-TSO Settlement of all energy exchanged between Relevant

Areas resulting from intended exchange of energy through agreed Ramping Period or agreed Ramp Rate Process.

5. The settlement mechanism shall ensure:
  - (a) fair and equal distribution of costs and benefits resulting from Exchange of Balancing Energy and Unintentional Deviation;
  - (b) incentives for Transmission System Operators to actively participate in cross border exchange of Balancing Energy; and
  - (c) that Transmission System Operators are incentivised to promote the objectives of Article 9 of this Network Code.
6. All Settlements of energy exchanged between Transmission System Operators due to the processes referred to in this Article shall be harmonised and conducted in accordance with Article 9.

#### **Article 39**

##### **INTENDED EXCHANGE OF ENERGY THROUGH IMBALANCE NETTING PROCESS**

1. Transmission System Operators in a Coordinated Balancing Area performing Imbalance Netting as defined in Article 24 shall settle among themselves the volume of intentionally exchanged energy due to this process.
2. The Settlement price of intentionally exchanged energy due to Imbalance Netting Process shall be based on the value of the avoided activation of Balancing Energy in Frequency Restoration Process inside each participating Relevant Area during the Imbalance Settlement Period.

#### **Article 40**

##### **INTENDED EXCHANGE OF ENERGY THROUGH CROSS-BORDER FREQUENCY RESTORATION ACTIVATION PROCESS**

1. All Transmission System Operators in a Coordinated Balancing Area participating in a Frequency Restoration Activation Process or Reserves Replacement Activation Process shall settle among themselves the volume of intentionally exchanged energy due to these processes and in accordance with Article 38 [General Principles of this section].

#### **Article 41**

##### **INTENDED EXCHANGE OF ENERGY THROUGH CROSS-BORDER RESERVE REPLACEMENT ACTIVATION PROCESS**

1. All Transmission System Operators in a Coordinated Balancing Area participating in a Frequency Restoration Activation Process or Reserves Replacement Activation Process shall settle among themselves the volume of intentionally exchanged energy due to these processes and in accordance with Article 38 [General Principles of this section].

**Article 42**  
**INTENDED EXCHANGE OF ENERGY THROUGH AGREED RAMPING PERIOD OR AGREED RAMP RATE PROCESS**

1. Transmission System Operators shall settle among themselves the volume of intentionally exchanged energy through agreed Ramping Period or agreed Ramp Rate Process.
2. To perform the Settlement of intentionally exchanged energy through agreed Ramping Period or agreed Ramp Rate Process according to paragraph 1, Transmission System Operators shall define a methodology to calculate the volume and the price of the intentionally exchanged energy due to this process, in accordance to Article 38 of this Network Code.

**Article 43**  
**UNINTENDED EXCHANGE OF ENERGY THROUGH UNINTENTIONAL DEVIATIONS**

1. No later than x months after entry into force of this Network Code all Transmission System Operators shall define the pricing method of Unintentional Deviation Energy.
2. All Transmission System Operators within the Synchronous Area shall financially settle among themselves the volume of unintentionally exchanged energy within a Synchronous Area.
3. The Settlement price of unintentionally exchanged energy within a Synchronous Area shall give adequate price signals for Transmission System Operators to be balanced. Energy from Unintentional Deviations shall be the most costly Balancing Energy.
4. The volume of unintentionally exchanged energy between asynchronously connected Transmission System Operators in different Synchronous Areas shall financially be settled by the Transmission System Operators involved.

**Article 44**  
**SETTLEMENT AND INVOICING**

1. Each TSO-TSO Settlement Function shall perform Settlement and Invoicing of relevant Balancing Services of a Coordinated Balancing Area, with regard to the financial rights and obligations.

SECTION 4  
**IMBALANCE SETTLEMENT TSO-BRP**

**Article 45**  
**GENERAL PRINCIPLES**

1. Each Transmission System Operator shall design the Imbalance Settlement mechanism in order to:
  - (a) encourage Balancing Responsible Parties to be balanced as close to the physical reality as possible or help the system to restore balance; and
  - (b) avoid perverse incentives to Balancing Responsible Parties, Balancing Service Providers and Transmission System Operators.

2. Each Transmission System Operator shall settle all imbalances according to the Settlement mechanism, applicable to all Balancing Responsible Parties.

**Article 46**  
**IMBALANCE SETTLEMENT PERIOD**

1. No later than xx months after entry into force of this Network Code, all Transmission System Operators shall submit to all National Regulatory Authorities and the Agency a Cost-Benefit Analysis on whether the Imbalance Settlement Period shall be harmonized within and between Synchronous Areas. This Cost-Benefit Analysis shall at least take into consideration:
  - (a) the need of consistency between the Program Time Unit and the Imbalance Settlement Period; and
  - (b) the impacts of Imbalance Settlement Period not exceeding 30 minutes.
2. No later than 6 months after the reception of the Cost-Benefit Analysis, all National Regulatory Authorities shall submit their decision on the harmonization of the Imbalance Settlement Period to all Transmission System Operators and, if applicable, a date for the implementation of this decision. In any case, this implementation date shall not be prior to the implementation date of the terms and conditions related to Balancing according to Article 13.
3. No later than three months before the implementation date according to paragraph 2, each Transmission System Operator shall be entitled to submit a proposal of Imbalance Settlement Period to its National Regulatory Authority that deviates from this decision. In this case, the Transmission System Operator shall provide a detailed Cost-Benefit Analysis justifying this deviation.

**Article 47**  
**IMBALANCE VOLUME CALCULATION**

1. Each Transmission System Operator shall establish a procedure for the Imbalance Volume calculation consisting of at least the following process steps:
  - (a) a calculation of the Imbalance Volume;
  - (b) notification of the Imbalance Volume; and
  - (c) finalisation of the Imbalance Volume.
2. All Balancing Responsible Parties shall be entitled to appeal against the Imbalance Volume calculation results under the terms and conditions related to balancing developed in accordance with Article 13.
3. This procedure shall include specifications on how Connection Transmission System Operators, for each Balancing Responsible Party, determine the finalised notified Position for each Imbalance Settlement Period, for each Relevant Area.
4. A notified Position for an Imbalance Settlement Period, for each Relevant Area shall have a magnitude and a direction, indicating the net direction of injections of Balancing Responsible Party, with negative indicating relative Balancing Service Provider withdrawal, and positive indicating relative Balancing Service Provider injection.
5. This procedure shall include specifications on how Connection Transmission System Operators, for each Balancing Responsible Party, determine the Allocated Volume of all injections and withdrawals covered by this Balancing Responsible Party, for each Imbalance Settlement Period, for each Relevant Area.

6. An Allocated Volume for an Imbalance Settlement Period, for each Relevant Area shall have a magnitude and a direction, indicating the net direction of injections of Balancing Responsible Party, with negative indicating Balancing Service Provider withdrawal, and positive indicating Balancing Service Provider injection.
7. For any Balancing Responsible Party that does not cover injections or withdrawals:
  - (a) the Connection Transmission System Operator shall not determine an Allocated Volume; or
  - (b) the Allocated Volume shall be 0 MWh

for each Imbalance Settlement Period for each Relevant Area.

8. This procedure shall specifications on how Connection Transmission System Operators, for each Balancing Responsible Party, determine the volume of Adjustment for each Imbalance Settlement Period, for each Relevant Area, due to:
  - (a) activation of Frequency Containment Reserves, Frequency Restoration Reserves or Replacement Reserves from any Balancing Service Provider that has appointed the Balancing Responsible Party to accept Adjustment; and
  - (b) any curtailment and/or redispatch.
9. An Adjustment for an Imbalance Settlement Period, for each Relevant Area shall have a magnitude and a direction, indicating the net direction of injections of Balancing Responsible Party, with negative indicating Balancing Service Provider withdrawal, and positive indicating Balancing Service Provider injection.
10. Transmission System Operator shall determine an Imbalance Volume for each Balance Responsible Party, for each Imbalance Settlement Period, for each Relevant Area from final notified Position, Allocated volume and Adjustment.
11. An Imbalance Volume for an Imbalance Settlement Period, for a Relevant Area shall have a magnitude and a direction, indicating the direction of the Settlement transaction between Balancing Responsible Party and Transmission System Operator, with negative indicating Balancing Responsible Party shortage, and positive indicating Balancing Responsible Party surplus.

#### **Article 48** **IMBALANCE PRICING**

1. Each Transmission System Operator shall define a procedure to calculate Imbalance Settlement Prices, to be paid or received by the Balancing Responsible Party to the Connection Transmission System Operator, including a definition of the value of avoided activation of Balancing Energy from Frequency Restoration Reserves or Replacement Reserves, e.g. due to Imbalance Netting, in its Relevant Area.
2. Each Transmission System Operator shall determine an Imbalance Price for each Imbalance Direction, shortage or surplus and for each Imbalance Settlement Period for each Relevant Area where Imbalance Volume is calculated.
3. The Imbalance Settlement Price for shortage for each Relevant Area shall not be less than the marginal price for activated Balancing Energy for Frequency Restoration Reserves or Replacement Reserves for this Relevant Area and shall include the value of the avoided

activation of Balancing Energy for Frequency Restoration Reserves or Replacement Reserves for this Relevant Area during the Imbalance Settlement Period.

4. The Imbalance Settlement Price for surplus for each Relevant Area shall not be higher than the marginal price for activated Balancing Energy for Frequency Restoration Reserves or Replacement Reserves for this Relevant Area and shall include the value of the avoided activation of Balancing Energy for Frequency Restoration Reserves or Replacement Reserves for this Relevant Area during the Imbalance Settlement Period.
5. In case both Balancing Energy for Frequency Restoration Reserves or Replacement Reserves for upward regulation and for downward regulation has been activated during the Imbalance Settlement Period, the Connection Transmission System Operator shall determine the Imbalance Prices for shortage and surplus based on at least one of the preceding principles.

## SECTION 5 SETTLEMENT OF PROCURED RESERVES

### Article 49 GENERAL PRINCIPLES

1. Each Transmission System Operator shall define rules for the Settlement of Balancing Reserves in accordance with the principles set forth in Article 32 These rules shall be included in the terms and conditions related to Balancing according to Article 13
2. Each Transmission System Operators shall perform Settlement of Balancing Reserves in a manner which promotes the achievement of the objectives of this Network Code in a timely manner.

### Article 50 SETTLEMENTS WITH BSPs FOR PROVIDED BALANCING RESERVE PRODUCTS

1. Each Transmission System Operator shall ensure the Settlement of all Standard Balancing Reserve products and all Specific Products procured from all Balancing Service Providers associated to a Balancing Responsible Party inside its Relevant Area.
2. Each Transmission System Operator shall define the rules for the Settlement of the Balancing Reserve Products provided by all Balancing Service Providers associated to a Balancing Responsible Party inside its Relevant Area.
3. The rules for the Settlement of the Balancing Reserve Products shall be transparent and published following the requirements specified in Article 8 and Article 13(a).

### Article 51 SETTLEMENTS BETWEEN TSOs DUE TO THE EXCHANGE AND SHARING OF RESERVES

1. All Transmission System Operators of a Coordinated Balancing Area shall settle among themselves all the Balancing Reserve Products exchanged within the Coordinated Balancing Area All Transmission System Operators of a Coordinated Balancing Area shall define the rules for the Settlement of the Exchange of Balancing Reserve Products inside the Coordinated Balancing Area.

2. The TSO-TSO Settlement of each Balancing Reserve product exchanged within a Coordinated Balancing Area shall be consistent with:
  - (a) the common pricing method for the Balancing Reserve products in the Coordinated Balancing Area pursuant to Article 20(3); and
  - (b) the settlement of the Balancing Reserve product with the Balancing Service Providers described in CHAPTER 5 SECTION 5.

**SECTION 6  
SETTLEMENT AMENDMENTS**

**Article 52  
GENERAL PRINCIPLES**

1. All Transmission System Operators of a Coordinated Balancing Area shall establish a centralised mechanism for Settlement amendments for settlements between all Transmission System Operators within a Coordinated Balancing Area, based on the principles set forth in Article 38 of this Network Code.
2. Each Transmission System Operator is responsible for shortcomings in its measurements and reporting and shall provide a mechanism for Settlement amendments for Settlements with Balancing Service Providers and Balance Responsible Parties. These mechanisms shall state a maximum time period after delivery within which Balancing Service Providers and Balancing Responsible Parties shall ask for amendments.

## **CHAPTER 6**

### **BALANCING ALGORITHM DEVELOPMENT**

#### **Article 53**

##### **BALANCING ALGORITHM DEVELOPMENT**

1. All Transmission System Operators shall develop principles for the development of Balancing Algorithms, applied for the optimised operation of common procurements of Balancing Reserves and activation of Balancing Energy, compliant with the requirements specified in this Network Code.
2. No later than 12 months after the entry into force of this Network Code, all Transmission System Operators shall submit the principles for the development of Balancing Algorithms, to all National Regulatory Authorities and the Agency.
3. All Transmission System Operators of a Coordinated Balancing Area shall develop Balancing Algorithms, to be applied for the optimised operation of relevant common procurements of Balancing Reserves or the relevant activation of Balancing Energy, in accordance with the principles for the development of Balancing Algorithms.

#### **Article 54**

##### **BALANCING ALGORITHM AMENDMENT**

1. All Transmission System Operators of a Coordinated Balancing Area shall be entitled to amend the Balancing Algorithm applied in the Coordinated Balancing Area.
2. All Transmission System Operators of a Coordinated Balancing Area shall duly consider proposals for amendments.
3. Any proposals for amendments shall be directed to all Transmission System Operators of a Coordinated Balancing Area supported by detailed information explaining and documenting the rationale for them.

# CHAPTER 7 REPORTING

## SECTION 1 ENSTO-E REPORTING TO THE AGENCY

### Article 55 ANNUAL REPORT

1. All Transmission System Operators shall provide input for the Annual Report to be published by ENTSO-E 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. Every second year the Annual Report can be published in a simpler version to review the progress made and update indicators but without performing detailed analysis.
3. No later than six month after the entry into force of this Network Code, ENTSO-E shall define and send to the Agency its proposal concerning the years where a complete Annual Report and the years where simple updates of the Annual Report will be performed.
4. The Annual 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;
  - (b) include a description of the evolution of Balancing resources and the quality of Balancing;
  - (c) include an assessment of the progress for coordination of the Balancing Energy activation from Frequency Restoration Reserves and from Replacement Reserves;
  - (d) include an assessment of the development of cross-border Exchanges of Balancing Reserves, including a status of the balancing projects in which each Transmission System Operator is involved
  - (e) include the costs of overall Balancing (including manual and automatic reserves or products) including an ex-post analysis of the realised costs and benefits of all reserved Cross Border Capacities;
  - (f) include the volumes of Balancing Energy used for balancing purposes, both available and activated, from Standard Products and from Specific Products;
  - (g) include the costs and benefits from all capacity reservation for Balancing Services purposes;
  - (h) include the assessment and the progress of harmonisation of Imbalance Settlement arrangements as well as the consequences and possible distortions due to non-harmonised features;
  - (i) analyse the costs and benefits, and the possible inefficiencies and distortions of having Specific Products in terms of competition and market fragmentation, facilitation of Demand Response and participation of renewable energy sources, integration of Balancing Markets and side-effects on other electricity markets; and
  - (j) assess the progress of harmonisation of products and rules for procurement of contracted reserves and analyse the effects of non-harmonisation.

5. The Annual Report shall be published on the ENTSO-E website and submitted to the Agency no more than nine month after the end of the year its refers to.
6. The ENTSO-E shall define and submit to the Agency the indicators which will be followed and updated in the Annual Report process no later than six months before the publication of the first report.
7. The performance indicators shall reflect:
  - (a) availability of Balancing Resources, including volumes available of Balancing products and reserves;
  - (b) welfare gain due to cross-border Exchanges of Balancing Services;
  - (c) benefits from the use of Standard Balancing products;
  - (d) total cost of Balancing;
  - (e) efficiency and performance of the balance, occurrence of unintentional and intentional deviations, area control error. This data are summarized as quality of Balancing; and
  - (f) possible inefficiencies and distortions in terms of competition and market fragmentation, facilitation of Demand Response and participation of renewable energy sources, integration of Balancing Markets and side-effects on other electricity markets.
8. The ENTSO-E shall be entitled to design and review the Annual Report structure, content and the performance indicators while respecting the following:
  - (a) The ENTSO-E shall propose to the Agency and all National Regulatory Authorities the structure and justification of the report no later than six month before the submission of the first Annual Report.
  - (b) The Agency shall approve, reject or request to amend the proposal of Annual Report content no more than one month after the submission of the proposal.
9. All Transmission System Operators shall develop tools to ensure real-time monitoring of performance and quality of Balancing in order to maintain their Frequency Restoration Control Error inside the defined range of the Network Code on Load Frequency Control and Reserves.

## **CHAPTER 8**

### **TARGETS AND TRANSITIONAL ARRANGEMENTS**

#### **Article 56**

##### **GENERAL PROVISIONS**

1. The Chapter on targets and transitional arrangements shall lay down the targets as set forth by the Framework Guideline on Electricity Balancing. The arrangements shall be compatible and, as far as possible, be consistent with arrangements specified in other Network Codes.

#### **Article 57**

##### **TARGETS**

1. All Transmission System Operators shall promote the development of a European wide TSO-TSO model for Balancing by applying the following step-by-step approach:
  - (a) no later than two years after the entry into force of this Network Code, all Transmission System Operators shall ensure that in their Coordinated Balancing Area:
    - the multilateral TSO-TSO model with Common Merit Order List is implemented for the Exchange of Balancing Energy from resources that are used as Replacement Reserves; and
    - cooperate to minimise, when economically efficient, counteracting activation of Balancing Energy taking into account Cross-Zonal Capacities.
  - (b) no later than three years after the entry into force of this Network Code, all Transmission System Operators shall elaborate,
    - a proposal on the target model for the exchanges of Balancing Energy from automatically activated Frequency Restoration Reserves. This proposal shall be submitted to all National Regulatory Authorities and the Agency; and
    - if certain features of the target model for the Exchange of Balancing Energy from Replacement Reserves and manually activated Frequency Restoration Reserves as defined in paragraph (d) are identified to be not feasible or do not ensure positive net benefit, all Transmission System Operators shall together prepare a proposal for modification of these features. The proposal shall be supported by a Cost-Benefit Analysis and justification and submitted to all National Regulatory Authorities and the Agency; and
    - harmonises principles for the Imbalance Settlement Period pursuant to Article 46 and subject to the results of Cost-Benefit Analysis.
  - (c) no later than four years after the entry into force of this Network Code, all Transmission System Operators shall ensure that in their Coordinated Balancing Area:
    - the multilateral TSO-TSO model with Common Merit Order List as defined in (a) is extended to Balancing Energy from resources that are used as manually activated Frequency Restoration Reserves; and
    - the Activation of Balancing Energy from automatically activated Frequency Restoration Reserves is coordinated between Transmission System Operators in order to optimise their use and reduce Balancing Costs. It shall also be coordinated with the Activation of Balancing Energy from manually activated Frequency Restoration Reserves and

Replacement Reserves to ensure the efficient use of all Balancing resources.

- (d) no later than six years after the entry into force of this Network Code, all Transmission System Operators shall be obliged to
- share in a European-wide TSO-TSO model with Common Merit Order List, all Balancing Energy Bids from resources that are used as Replacement Reserves and manually activated Frequency Restoration Reserves, taking into account features of the target model that have been changed pursuant to paragraph (b).
  - develop a proposal for modification of features of the target model for the exchanges of Balancing Energy from automatically activated Frequency Restoration Reserves, if Transmission System Operators have identified that certain features are not feasible or do not ensure positive net benefit;
2. The standards and requirements of the Network Code on Electricity Balancing shall also apply to existing agreements related to Electricity Balancing that were concluded between a Transmission System Operator and a relevant grid user before the expiration of the transitory period.

#### **Article 58** **COST-BENEFIT ANALYSIS**

1. All Transmission System Operators shall apply a Cost-Benefit Analysis, taking into account the general principles and objectives of this Network Code, before the implementation or use of mechanisms of the European wide TSO-TSO model for Balancing and for the harmonisation of the Imbalance Settlement Period according to Article 46.
2. All Transmission System Operators of a Coordinated Balancing Area shall apply a Cost-Benefit Analysis, taking into account the general principles and objectives of this Network Code, for any decision on the reservation of Cross Zonal Capacity as a part of the methodology for the provision of Cross Zonal Capacity, pursuant to Article 30.
3. For sharing Frequency Restoration Reserves, adjacent Transmission System Operators shall apply a Cost-Benefit Analysis if required by National Regulatory Authorities.
4. Six months before its application, all relevant Transmission System Operators shall submit the criteria and methodology of a Cost-Benefit Analysis to the Relevant Regulatory Authorities for approval.
5. The Cost-Benefit Analysis shall at least consider the objectives of this Network Code set forth in Article 9, and :
  - (a) a Social Welfare quantification in accordance with the Network Code on Capacity Allocation and Congestion Management;
  - (b) the cost of implementation of a new Balancing mechanism or platform;
  - (c) the impact on European, regional and national Balancing costs;
  - (d) the potential impact on regional energy market prices; and
  - (e) the impact on market parties in terms of additional technical or IT requirements.
6. All Transmission System Operators of a Coordinated Balancing Area shall provide the result of the Cost-Benefit Analysis to the Relevant Regulatory Authorities, together with justified proposals on how to tackle possible issues identified by the Cost-Benefit Analysis. On that

basis, the Relevant Regulatory Authorities shall decide on the way forward after public consultation.

7. The results of all the Cost-Benefit Analyses shall be contained in the Annual Report.

## **Article 59 DEROGATIONS**

1. Each Transmission System Operator may apply for derogation in respect of one or more provisions of this Network Code by submitting a written request to the National Regulatory Authority.
2. The derogation process shall be transparent, non-discriminatory, non-biased, well documented and based on a reasoned request by the Transmission System Operator demonstrating the fulfilment of the conditions listed in paragraph (3).
3. Derogations can be granted to Transmission System Operators who would be unable to implement certain provisions of the Network Code within the timeframes required by the Network Code for the reasons that;
  - (a) the requesting Transmission System Operator would be, at the day of application of the provisions for which derogation is requested, in a significantly different situation from other Transmission System Operators 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 Relevant Area of the requesting Transmission System Operator.
4. The admissible application requesting derogation shall be submitted 6 months prior to the day of application of the provisions from which derogation is requested. During the derogation process the Transmission System Operator requesting derogation shall be deemed compliant with the provision from which derogation is requested.
5. Derogation may be granted for a maximum period of two years.
6. The reasoned request for derogation shall include all the following information and documents:
  - (a) articles for which derogation is requested;
  - (b) requested derogation period;
  - (c) a detailed plan and timeline as to how the Transmission System Operator requesting derogations intends to address the reasons underlying the request for derogations and thus ensure the implementation of the concerned provisions of the 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 requested derogation.
7. The relevant National Regulatory Authority shall decide within six months of the reception of an admissible application for derogation on whether to grant the derogation. In assessing the request for the derogation, the relevant National Regulatory Authority shall consider the following aspects:

- (a) difficulties of implementing the concerned provisions due to the specificities of the derogation requesting Transmission System Operator's situation, in terms of national Balancing arrangements; risks and/or implications of the concerned provisions, in terms of operational security;
  - (b) actions taken by the derogation requesting Transmission System Operator 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 Response and renewable sources of energy;
  - (d) impacts on overall Social Welfare; and
  - (e) impacts on other Relevant Areas and overall consequences on European market integration process.
8. The relevant National Regulatory Authority shall notify the Agency of the reception of admissible applications for derogation.
9. The relevant National Regulatory Authority shall notify the Agency and the European Commission of their decision with respect to applications for derogation and publish it on its web page.
10. Each National Regulatory Authority shall maintain a register in which derogations are recorded, together with the reasons for their granting and the consequences of the derogations.

#### **Article 60 EXEMPTIONS**

In the Micro Isolated Systems and small isolated systems and in the isolated systems which do not present any cross-border network issues or market integration issues, the provisions of this Network Code shall not apply.

## **CHAPTER 9 FINAL PROVISIONS**

### **Article 61 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.

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