

ENTSO-E

Network Code on Capacity Allocation and Congestion Management

Capacity Calculation Section

January 2012

Notice

The contents of this document reflect the status of ongoing work by TSO experts as of January 2012, based on the ACER framework guideline on Capacity Allocation and Congestion Management published on 29 July 2011, as well as the input of an extensive dialogue with stakeholders.

Disclaimer

This draft does not represent a firm, binding and definitive ENTSO-E position on the contents, the structure, or the prerogatives of the “network code on Capacity Allocation and Congestion Management”.

PURPOSE AND OBJECTIVES

Whereas:

Capacity Calculation

- (5) An understanding of the criteria for defining security margins and the levels of those margins is beneficial to the efficient functioning of the market.
- (6) The Capacity Calculation process relies on trade-offs and a risk assessment process in which both the financial risks (firmness costs) and the physical risks are taken into account
- (7) The calculation of cross border capacity at each bidding zone boundary should reflect National Security of Supply standards and risk management policies.
- (8) Optimal use of transmission network capacity is enhanced via coordinated and harmonized capacity calculation principles.
- (9) Remedial actions are required to ensure security of supply (by relieving congestion) and may optimise capacity.
- (10) A transparent, coordinated approach to remedial actions can enhance efficiency, though such actions may still have a significant cost.
- (11) A common grid model which reflects the European power system is required to calculate cross bidding zone capacities in a coordinated manner.
- (12) The provision of accurate and timely market information is essential to the operation of the Common Grid Model.
- (13) Two alternative methods of calculating capacities shall be permissible for calculating cross bidding zone capacities within Europe: flow-based and coordinated NTC
- (14) Flow-based method is preferred to the coordinated NTC method for short term capacity calculation in cases where transmission networks are highly meshed and interdependencies between the interconnections are high
- (15) NTC methodology in highly meshed grids requires capacity splitting between borders. The capacity on each border has an influence on all other capacities. This capacity splitting has to be made by TSOs before allocation.
- (16) Bidding zones have to be coordinated with control areas
- (17) Bidding zones may not coincide with the borders of a Member State
- (18) The definition of bidding zones has an important bearing on the management of congestion and social welfare. The definition of bidding zones should contribute to sending efficient short and medium term price signals and to indicate needs for future network or generation investment and to take into account the impact on other bidding zones.
- (19) Trade-offs are required between liquidity, market power issues and the costs of redispatch.

(20) Bidding zones should be consistent across different capacity calculation timeframes and be relatively stable across time, while reflecting changing network conditions.

(21) The efficient functioning of the market is reliant on the timely and comprehensive publication of market information and is dependent on understanding the models and methodologies used in producing results.

(22) Capacity calculation has to take into account natural flows existing in the grid and external exchanges

(23) Cross border capacity is not thermal capacity

(24) Social welfare is not only the economic surplus objective function of allocation algorithms. It is wider.

DRAFT

Title 1

GENERAL PROVISIONS

Article 1

DEFINITIONS (glossary)

Cross border capacity - the capability of a cross border interconnection (NTC type - aggregated interface between bidding zones) or a physical branch (FBA type) to accommodate cross border exchanges

Capacity calculation timeframes - The timeframes in which there is a need for capacity allocation.

Capacity calculation process- a process in which the capability of the network to accommodate market transactions is assessed, it consists of calculation of the Cross border capacity. This assessment must be in line with the Network code for Operational Security.

Reliability margin – The margin reserved on the permissible loading of a critical branch or interconnector to cover against uncertainties related to real time operation and connected to capacity calculation process.

Operational security constraint - Operational security constraints aim at reflecting the security operational limits that guarantee secure and reliable operation of the interconnected power system. Operational security constraints ensure that Capacity Calculation Process is performed according to NC for OS.

Border - A set of physical lines linking adjacent Bidding Zones.

Remedial action - A measure activated by TSOs to relieve congestions within the grids

Non costly remedial action - A remedial action is non costly if no direct payments are made by the TSO for its activation.

Costly remedial action - A remedial action is costly if it is not non costly.

Pre fault remedial action - remedial action that is applied before a fault

Post fault remedial action - remedial action that is applied after a fault.

Cross-border remedial action - A remedial action is said to be cross-border if during capacity calculation this action is needed to relieve a potential congestion in a TSO control area, but not fully controlled by that TSO

Redispatching - Measure taken by TSOs by altering the generation pattern in order to change physical flows in the grid and relieve congestion

Countertrading - Cross border exchange initiated by TSOs between two bidding zones to relieve congestion.

Common grid model (CGM) - European wide data set used as a unique basis for capacity calculation. Created through European merging function.

- The CGMs for day ahead capacity calculation are named D2CF

- The CGMs for intraday capacity calculation are named DACF
- The DACF updates in intraday are called IDCF
- The CGMS for month ahead capacity calculation are named MACF
- The CGMS for year ahead capacity calculation are named YACF

European merging function - Single European function creating the unique common grid models, through the merging of all individual grid models

Control area - is a coherent part of a synchronous area (usually coinciding with the territory of a company, a country or a geographical area, physically demarcated by the position of points for measurement of the interchanged power and energy to the remaining interconnected network), operated by a single TSO, with physical loads and controllable generation units connected within the Control Area.

Bidding zone - an area where Market Participants submit their bids. [add something to say that you can only submit bids where you are physically connected]

Net position - Sum of electricity exports and imports for each Market Time Period for a Bidding Zone

Market Time Period - is a time resolution used in the day ahead and intraday Market,

Generation shift keys - a means of translating a net position change of a given bidding zone into specific injection increases/decreases in the CGM.

Internal grid element - A grid element which is not on a border between bidding zones

Coordinated Net transmission capacity (NTC) - NTC refers either to a cross border capacity or to a capacity calculation methodology based on the principle of assessing and defining ex-ante a maximum commercial exchange between two bidding zones separated by an electrical border.

Flow-based or flow-based approach - Flow-based or flow-based approach is a capacity calculation methodology limiting the cross border exchanges between bidding zones directly with the maximum flows on the critical branches of the grid and Power Transfer Distribution Factors.

Power Transfer Distribution Factors - estimate the influence of cross border exchanges between bidding zones on grid elements.

Flow-based parameters - are the available margin on critical elements with associated Power Transfer Distribution Factors.

Highly meshed grids - is a grid where the distribution of power flows over the lines interconnecting the Bidding zones is highly influenced by exchanges between other bidding zones.

Social welfare - A quantification of social welfare shall at least contain the following dimension in order to assess the potential social welfare implications of alternative policy options:

- The additional economic benefit, defined as the sums of the additional individual benefits and costs which are expected to be accrued due to the implementation of the respective policy options compared to the status quo. These surpluses shall be analysed independently for the respective groups of stakeholders:
 - Tariff customers
 - In its entirety, and
 - As different groups previously defined as classes with differing affordability of electricity
 - Market participants

- TSOs
- Assumptions about the redistributive effects of an increase of one of the above components for the surpluses of the other groups stated above.

Critical network element – is a grid element taken into account in capacity calculation process, which induces a limit upon the amount of inter zonal power exchanges. This limit is needed in order to maintain the security of the power system

Merchant line – [pending LRG definition]

Capacity calculation region - Regions for the application of a regional coordinated capacity calculation. A TSO belongs to a capacity calculation region if a part of its control area belongs to one of the bidding area of one of the border of the capacity calculation region.

Coordinated capacity calculation function - Function through which capacities are calculated, at least at a regional level. It also comprises the management of the validation process

Capacity validation - Capacity validation is a step of the capacity calculation process where TSOs accept or correct the capacities calculated through the coordinated capacity calculation function.

Financial risk - is the risk of incurring costs related to physical firmness and financial firmness costs

Physical risk – is the combined effect of probability and consequences of all events on the electrical system

Structural congestion - Congestion in the grid that:

- can be unambiguously defined;
- is predictable;
- is stable over time, i.e. does not change its geographic position in the network under short-term influences
- is frequently reoccurring under common circumstances

Title 2

REQUIREMENTS

Chapter 1

CAPACITY CALCULATION

SECTION 1: GENERAL REQUIREMENTS

Article 7

ROLES WITHIN THE CAPACITY CALCULATION PROCESS

1. The Capacity Calculation Process shall be the sole responsibility of TSOs.
2. All TSOs shall set up a single European Merging Function.
3. All the TSOs within each capacity calculation region shall set up and single Coordinated Capacity Calculation Function.

Article 8

OBJECTIVES OF THE CAPACITY CALCULATION PROCESS

1. The Capacity Calculation Process shall achieve the following objectives:
 - (a) Ensure system security, in accordance with operational security code
 - (b) Optimise available cross border capacity between bidding zones promoting social welfare
 - (c) Produce results in a transparent and replicable manner.
2. Merchant lines shall be taken into account in the Capacity Calculation Process in the same way as any other network elements, unless the exemption conditions obtained in the exemption decisions state otherwise.

Article 9

CAPACITY CALCULATION TIMEFRAMES

1. The Capacity Calculation Process shall produce results for at least the following Capacity Calculation Timeframes:

- (a) Day Ahead
 - (b) Intra-day
- 2. Unless otherwise stated, the requirements of this chapter shall apply to all Capacity Calculation Timeframes.
- 3. All TSOs of each capacity calculation region shall update Cross Border Capacities in intraday, based on the latest information. The frequency of this intraday update shall be guided by the principles of social welfare optimisation.

Article 10

DETERMINATION OF CAPACITY CALCULATION REGIONS

- 1. No later than 12 months after the entry into force of this regulation, all TSOs shall make a single proposal to ACER regarding the definition of the capacity calculation regions within which coordinated capacity calculation shall be performed.
- 2. The proposal developed pursuant to paragraph 1 shall comply with the following:
 - (a) Each border shall be attributed to exactly one capacity calculation region; and
 - (b) The initial capacity calculation regions for the application of a coordinated capacity calculation shall be based on the regions in 3.2. as specified in Annex 1 of Regulation (EC) No 714/2009 of the European Parliament and of the Council; and
 - (c) The definition of regions shall be based on an assessment against the relevant objectives of the Capacity Calculation Process as specified in Article 8; and
 - (d) Relevant non EU/EAA member states may be included in the capacity calculation regions through voluntary agreements.
- 3. Within 4 months of receiving a proposal compliant with the requirements of paragraph 2, ACER shall accept or reject the proposal.
- 4. In the event that no proposal as described in paragraph 1 has been submitted to ACER by a date 1 year after the entry into force of this regulation, ACER shall be entitled to make a proposal for capacity calculation regions.
- 5. All TSOs shall implement ACER's decision pursuant to paragraph 2 or 3 no later than 3 months from the date of that decision.

Article 11

CHANGES IN THE DEFINITION OF CAPACITY CALCULATION REGIONS

1. In the event that ENTSOE or ACER identifies a need to reassess the definition of Capacity Calculation Regions, all TSOs may propose a new definition of capacity calculation regions based on an assessment against the relevant objectives of the Capacity Calculation Process specified in Article 8. Within 4 months, the Agency shall approve or reject the new definition of capacity calculation region proposal.
2. In case of the application of a flow-based coordinated capacity calculation, the capacity calculation region where a single Coordinated Capacity Calculation Function is applied, as specified in Article XX, shall be the entirety of all capacity calculation regions applying a flow-based coordinated capacity calculation, provided that the capacity calculation regions are:
 - a. linked electricity systems;
 - b. within the same flow-based allocation; and
 - c. the pre-requisites specified in Article XX are fulfilled.

SECTION 2:

METHODOLOGY TO DETERMINE INPUTS TO BE USED IN THE CAPACITY CALCULATION PROCESS

Article 12

METHODOLOGY TO DETERMINE REQUIRED INPUTS

1. As soon as reasonably practicable and no later than 12 months after the entry into force of this regulation, each TSO shall define a single methodology containing the following sections:
 - (a) The determination of reliability margins as per Article XX.
 - (b) The determination of relevant operational security constraints as per Article XX.
 - (c) The determination of Generation Shift Keys as per Article XX.
 - (d) The construction of Individual Grid Model as per Article XX.
 - (e) The determination of remedial actions to be considered in capacity calculation as per Article XX.
2. Each TSO shall submit the methodology to their National Regulatory Authority for approval.
3. Within 4 months of receiving a complete proposal pursuant to paragraph 2, NRAs shall accept or reject the proposal.
4. In the event that NRAs reject the proposal they shall provide grounds for their decision based on the objectives of the Capacity Calculation process specified in Article XX.

5. Within [x] months of a rejection from the National Regulatory Authority, TSOs shall resubmit a proposal to National Regulatory Authorities consistent with the requirements of paragraph 2.

Article 13

CHANGES TO THE METHODOLOGY TO DETERMINE REQUIRED INPUTS

1. TSOs shall be the sole party entitled to amend the methodology developed pursuant to Article 12.
2. Where a TSO proposes an amendment(s) to the methodology defined in Article 12(1), the TSO shall:
 - (a) Develop and submit a proposal to amend that input to its National Regulatory Authority.
 - (b) Demonstrate how the proposal better facilitates the capacity calculation objectives specified in Article 8.
3. Within 4 months of receiving a complete proposal pursuant to paragraph 2, NRAs shall accept or reject the proposals.
4. In the event that NRAs reject the proposal they shall provide grounds for their decision based on the objectives of the Capacity Calculation process specified in Article XX.

Article 14

DEFINITION OF THE RELIABILITY MARGIN METHODOLOGY

1. Each TSO shall define its methodology for determining the size of the reliability margin based on a statistical approach, and both physical risk and financial risk, taking into account historic evidence and future expectations.

Article 15

SPECIFYING THE SIZE OF THE RELIABILITY MARGIN

1. Each TSO shall define reliability margins for each critical branch or for each border, and for each capacity calculation time frame based on the methodology specified in Article XX.
2. The reliability margin shall comprise two parts:
 - (a) A real time component as defined in the Operational Security Code.
 - (b) A capacity calculation component.

3. The capacity calculation component of the reliability margin shall be calculated based on, but not limited to, firmness regime and assumptions regarding:
 - (a) Load and generation forecast and pattern; and
 - (b) Network topology; and
 - (c) Expected net positions and exchanges
4. In defining the size of reliability margin, each TSO shall be guided by statistical approach, physical risk and financial risk.

Article 16

OPERATIONAL SECURITY CONSTRAINTS

1. In defining capacities, each TSO shall respect at least the following operational security constraints under different contingencies defined by the Operational Security Code.
 - (a) Thermal limits of the critical network elements.
 - (b) Voltage limits, imposing admissible substation voltage ranges.
 - (c) Dynamic stability limits ensuring the stability of the power system, where appropriate
 - (d) Generation limits ensuring adequate availability of generation reserves to meet the requirements defined by Operational Security Code.
2. Critical network elements shall be both cross border and/or internal elements. Each TSO shall inform about the relevance of these critical network elements to the respective NRA if requested to do so by NRAs.

Article 17

DATA FOR INDIVIDUAL GRID MODEL

1. No later than 6 months after the entry into force of this regulation, all TSOs shall develop and consult on a proposal regarding:

- (a) the generation and load units which shall be required to provide information to TSOs for capacity calculation.
- (b) The types of information to be submitted. This information shall include, but not be limited to:
 - i. Information related to technical data
 - ii. Information related to availability
 - iii. Information related to scheduling of generation units
 - iv. Information related to price estimation

This proposal shall respect the principles of transparency, proportionality and non-discrimination.

- 2. Following consultation the proposal shall be submitted to ACER for approval.
- 3. ACER shall approve or reject the proposal submitted by all TSOs within 3 months of the date of receipt.
- 4. Following a decision by ACER all TSOs shall publish:
 - (a) A list of parties required to provide information; and
 - (b) A list of information to be provided.

Article 18

AMENDMENT OF DATA FOR INDIVIDUAL GRID MODEL

- 1. All TSOs shall be entitled to develop, consult on and submit proposals to amend the list of generator and load units required to provide information or the list of data to be provided pursuant to Article 17 by making a proposal to ACER at any point.
- 2. In such cases, ACER shall approve or reject the proposal submitted by all TSOs within 3 months of the date of receipt.
- 3. All TSOs shall update the data published in accordance with Article 17(4) to reflect the decision.

Article 19

DELIVERY OF DATA FOR INDIVIDUAL GRID MODEL

- 1. For each capacity calculation time frame, each generator or load unit included in the list established pursuant to Article 17 4a shall provide the data specified in Article 17 4b to the TSO responsible for the respective control area.
- 2. Each generator or load unit included in the list established pursuant to Article 17 4a shall use best endeavours to deliver as reliable a set of estimations as reasonably practicable.

Article 20

COMMON GRID MODEL SCENARIOS

1. All TSOs shall produce a set of scenarios for each capacity calculation timeframe for use in the Common Grid Model.
2. There shall be one scenario per market time period for the day ahead and intraday capacity calculation timeframe.
3. All TSOs shall define for each scenario, common rules fixing the net position for each bidding zone and the flow for each DC line.

Article 21

INDIVIDUAL GRID MODEL

1. All TSOs operating within a given bidding zone shall work together to deliver a single data set termed individual grid model to all other TSOs and to the European merging function for each scenario as defined in Article XX.
2. Individual grid model shall consist of best forecasts of system conditions. These individual grid models shall cover the relevant part of the European system for capacity calculation.
3.
 - a. Each TSO shall provide all the needed data in the Individual grid model to perform active and reactive power flow calculations and voltage calculations in both steady state and slow dynamic state.
 - b. Beyond items defined in paragraph 3.a., and upon agreement in the capacity calculation region, each TSO of each capacity calculation region shall provide complementary data where appropriate to take into account dynamic stability in capacity calculation
4. All TSOs of each bidding zone shall provide individual grid models which respect the net position rules defined in paragraph 1.
5. Each TSO shall use best endeavours to deliver as reliable a set of estimations as reasonably practicable for each individual grid model.

Article 22

REMEDIAL ACTIONS

1. Each TSO shall define which specific remedial actions will be available in capacity calculation.
2. Each TSO shall use available non costly remedial actions during capacity calculation
3. Each TSO shall ensure that the considered actions will be the same for all capacity calculation time frames taking into account their technical availabilities for each capacity calculation timeframe.
4. Each TSO shall ensure that remedial actions shall be considered in capacity calculation under the condition that the remaining available remedial actions together with the reliability margin as defined in Article XX are sufficient to allow TSOs to operate the system securely in line with the security principles as defined in the Network Code for Operational Security.
5. All TSOs for each capacity calculation region as defined in Article XX shall coordinate and communicate with at least all other TSOs in that capacity calculation region regarding the use of remedial actions for capacity calculation
6. All TSOs of each capacity calculation region shall agree on the use of cross border remedial actions in capacity calculation.

SECTION 3:

COUNTERTRADING & REDISPATCHING

Article 24

REDISPATCHING AND COUNTERTRADING

1. Each TSO shall agree at least with each of its neighbouring TSOs on redispatching and/or countertrading arrangements.
2. Each TSO shall be able to redispatch all available generation units in accordance with the appropriate mechanisms or/and bilateral agreements applicable to its control area.
3. Unless market based pricing of redispatching capabilities exists, market participants shall ex-ante provide information necessary for calculating the redispatching cost to the relevant TSOs. This information shall be confidential and be shared between the relevant TSOs for redispatching purposes only.

SECTION 4:

CAPACITY CALCULATION METHODS

Article 25

CAPACITY CALCULATION METHODS

1. Capacity calculation shall be made only using the flow-based methodology or the coordinated-NTC methodology.
2. For day ahead and intraday capacity calculation time frames, in highly meshed grids all TSOs of each capacity calculation region shall calculate Cross Border Capacity based on the flow-based methodology, once the following prerequisites are fulfilled:
 - (a) system security shall be compliant with Network Code for System Operations in the whole considered area
 - (b) social welfare shall be higher in the considered area
 - (c) transparency of method and results has been ensured in the considered area
 - (d) market participants shall be given sufficient time to adopt their processes
 - (e) Approval of the NRAs based on the proposal of the TSOs

Article 26

THE SPLIT OF CAPACITIES UNDER THE COORDINATED NTC METHOD

1. Where cross border capacity is calculated based on coordinated-NTC methodology, all TSOs of each capacity calculation region, where appropriate, shall split cross border capacity between the different borders prior to the capacity allocation.
2. The splitting rule shall be proposed by the respective TSO(s) and is subject to approval of the respective NRA(s).

SECTION 5:

THE CAPACITY CALCULATION PROCESS

Article 27

GENERAL PROVISIONS

1. As soon as reasonably practicable after the entry into force of this regulation and no later than 12 months, rules for the operation of the following within the Capacity Calculation Process shall be defined:

- (a) The process for merging inputs creating the Common Grid Model, by all TSOs.
 - (b) The process for calculating and validating cross border capacities on at least a regional basis, by all TSOs of each capacity calculation region.
2. This Coordinated capacity calculation function shall cover the capacity calculation process on a regional basis at least, as defined in article XX, the management of the validation of capacities as defined in Article XX and the provision of information to the parties responsible for Capacity Allocation as defined in Article XX.

Article 28

COMMON GRID MODEL INPUTS

1. Each Market Participant shall provide the data specified in Article XX for each generation or load, where appropriate, for each Capacity Calculation timeframe to the TSO responsible for the operation of the Control Area to which that Market Participant is connected. Such data shall only be required in the event that data differs from that provided in accordance with Article XX.
2. Each TSO shall provide the data specified in Article XX to the European merging function and all other TSOs before each capacity calculation.

Article 29

MERGING

1. For each capacity calculation timeframe, a single common grid model for each scenario shall be created at the European level by merging inputs from all TSOs through the European Merging Function.

Article 30

COMMON GRID MODEL OUTPUTS

1. The European merging function shall provide to each TSO and all the coordinated capacity calculation functions, the Common Grid Model for each scenario.

Article 31

REGIONAL CAPACITY CALCULATION INPUTS

1. The Coordinated Capacity Calculation Functions shall receive the Common Grid Model for each scenario in accordance with Article XX.
2. Each TSO of each capacity calculation region shall provide the Coordinated Capacity Calculation Function of this capacity calculation region, and to all TSOs of this capacity calculation region, with the inputs defined in Article XX, provided in accordance with the methodologies developed pursuant to Article XX, for each time frame.

Article 32

REGIONAL CAPACITY CALCULATION PROCESS

1. Each Coordinated Capacity Calculation Function shall use the data specified in Article XX and one of the Capacity Calculation Methods specified in Article XX to achieve the objectives specified in Article XX for that capacity calculation region.
2. Each TSO shall be available for questions related to capacity calculation inputs to the Coordinated Capacity Calculation Functions during the capacity calculation process

Article 33

REGIONAL CAPACITY CALCULATION OUTPUTS

1. Each Coordinated Capacity Calculation Function applying the NTC methodology shall produce cross-border capacity values for each border within the capacity calculation region. Each Coordinated Capacity Calculation Function applying the flow-based methodology shall produce flow-based parameters for each bidding zone within the capacity calculation region. These cross border capacities shall be submitted to each TSO within that capacity calculation region.

Article 34

INPUTS TO THE VALIDATION OF REGIONAL CAPACITY CALCULATION

1. Each TSO shall receive regional capacity calculation outputs in accordance with Article X.

Article 35

VALIDATION OF THE RESULTS OF REGIONAL CAPACITY CALCULATION

1. Each TSO shall validate the results of the capacity calculation on its borders or critical grid elements. Each TSO shall take the measures necessary to correct or accept the capacities

resulting from the capacity calculation region's coordinated capacity calculation relevant to the respective TSO's borders.

2. Each TSO shall send its capacity validation or capacity correction to the relevant Coordinated Capacity Calculation Function and to the other relevant TSOs.
3. In case of the application of a Coordinated Capacity Calculation Function in two neighbouring capacity calculation regions, the TSOs at the border of these capacity calculation regions shall ensure the coordination of the application of their respective Coordinated Capacity Calculation Function through mutually exchanging and acknowledging relevant information. Assumptions on the interdependencies between the respective regional Coordinated Capacity Calculation Functions shall be shared amongst the entities assigned according to Article xx of this Regulation in due time before the execution of the Coordinated Capacity Calculation Function. The report [Transparency section] prepared by the ENTSO for Electricity shall contain an assessment of the coherence of these assumptions.
4. All TSOs of each capacity calculation region shall develop agree and apply harmonized rules for the validation of the cross border capacities for each time frame. Where an NTC-based capacity calculation methodology is applied, these rules shall foresee a common coordinated methodology for the correction or acceptance of capacities.
5. During the validation process, each TSO shall be able to reduce the cross-border capacity on its border or its critical grid elements.

Article 36

OUTPUTS OF THE VALIDATION OF REGIONAL CAPACITY CALCULATION

1. Results shall be provided by each Coordinated Capacity Calculation Function to the [xx] for Day Ahead capacity allocation and [xx] for Intra Day capacity allocation.

CHAPTER 2:

BIDDING ZONES

SECTION 1: DETERMINATION, REVIEW & APPROVAL OF ZONES

Article 37

OBJECTIVES OF BIDDING ZONES

1. Bidding zones shall be defined in a manner which:

- (a) Promotes efficient congestion management and secure operation of the grid within and between bidding zones.
- (b) Enhances social welfare;
- (c) Reflects congestions within the European network, taking into account impacts on neighbouring bidding zones;

Article 38

PROPERTY OF BIDDING ZONES

1. Each generation and load unit shall belong to only one bidding zone for each market time period

Article 39

CRITERIA TO DEFINE AND ASSESS THE EFFICIENCY OF ALTERNATIVE BIDDING ZONE CONFIGURATIONS

1. Bidding zones shall be consistent for all market timeframes.
2. Bidding zones shall be sufficiently stable and robust over time.
3. The assessment shall take into account at least:
- (a) The security of system operation and security of supply;
 - (b) The location of congestion and their frequency, provided that :
 - (i) structural congestions shall be the main principle guiding the delimitation of bidding zones; and
 - (ii) new investments could relieve present congestions.
 - (c) The impact of power flows created by exchanges within a bidding zone in other bidding zones
 - (d) Market efficiency, assessed in terms of economic surplus as defined by allocation algorithms, firmness costs, liquidity, competition and the correctness of price signals;
 - (e) The impact on the operation and efficiency of balancing mechanism and imbalance settlement processes.

Article 40

BIANNUAL REPORTS ON CURRENT BIDDING ZONES

1. The efficiency of current European bidding zones shall be assessed every two years. The assessment shall consist in two reports :
 - (a) A technical report prepared by the ENTSO for Electricity; and
 - (b) A market efficiency report prepared by National Regulatory Authorities in coordination with the Agency.
2. The first biannual reports shall be delivered within 6 months after the entry into force of this regulation, and thereafter on a biannual basis.
3. Based on the first biannual reports, NRAs shall either approve the present zone configuration or request to launch, where appropriate, the regional process for defining new bidding zones as described in article 43.

Article 41

BIANNUAL TECHNICAL REPORT ON BIDDING ZONES

1. The technical report shall be sent by the ENTSO for Electricity to National Regulatory Authorities and the Agency. The report shall include, at a minimum:
 - (a) A list of structural congestions and major congestions, including their location and frequency,
 - (b) Analysis of the expected evolution of these congestions due to investments in network or significant change in generation or consumption
 - (c) Analysis of the share of power flows that are not allocated using a market-based congestion management mechanism, where appropriate.
 - (d) Congestion revenues, cross border firmness cost, and internal and cross border redispatching cost for each bidding zone
2. Each TSO shall provide the ENTSO for Electricity with relevant data and analysis to allow the preparation of the technical report.
3. The technical report shall contain an advice to launch, where appropriate, the regional process for defining new bidding zones described in article 43.

Article 42

BIANNUAL MARKET EFFICIENCY REPORT

1. The market efficiency report shall be done by National Regulatory Authorities in coordination with the Agency. It shall be sent by the Agency to ENTSO-E. The market efficiency report shall

include, at a minimum, for each bidding zone, an assessment of liquidity, competition and the correctness of price signals.

2. TSOs, Market Operators, and other market participants shall provide National Regulatory Authorities with relevant data and analysis to allow the preparation of the market efficiency report.
3. The market efficiency report shall contain an advice to launch, where appropriate, the regional process for defining new bidding zones described in article 43.

Article 43

REGIONAL PROCESS FOR DEFINING NEW BIDDING ZONES

1. All affected TSOs and National Regulatory Authorities shall participate in the regional process of new bidding zone delimitation within the studied region(s), unless paragraph 2 applies. The responsibility within the process are:
 - (a) TSOs shall be responsible for the definition and proposition of bidding zones,
 - (b) National Regulatory Authorities shall be responsible for approving the new delimitation of zones.
2. By exception of paragraph 1, due to system security or security of supply reasons, or where the zone delimitation has negligible or no impact on neighbouring TSOs, the affected TSO and the National Regulatory Authority can perform a specific process of the new bidding zone delimitation in an open and transparent manner, while taking into consideration time constraints, where appropriate. The possibility to use this specific process shall be notified to the neighbouring TSOs before its application. The responsibility within this specific process is:
 - (a) the TSO shall be responsible for the definition of bidding zones,
 - (b) the National Regulatory Authority shall be responsible for approving any changes to the delimitation of zones.
3. The following parties shall be entitled to request a regional process for defining new bidding zones:
 - (a) The Agency in light of the conclusions of the biannual reports produced pursuant to Articles 40 to 42,
 - (b) Any National Regulatory Authority in light of the conclusions of the bi-annual reports produced pursuant to Articles 40 to 42, if it is related to the area it regulates,
 - (c) The ENTSO for Electricity in light of the conclusions of the bi-annual reports produced pursuant to Articles 40 to 42,

- (d) Any TSO in the case of a significant change in network topology, generation or load patterns which could endanger its security of supply or security of system.

The request shall indicate the relevant geographical area for a regional process for defining bidding areas.

4. In the event one of the parties defined in paragraph 3 wishes to trigger a regional process for defining new bidding zones, that party shall clearly detail the reasons motivating the request in light of the objectives specified in Article 37 [*Objectives of bidding zones*]. Unless paragraph 2 applies, all affected NRAs shall decide within 2 month to accept or reject that request. If NRAs accepted the launch of the regional process for defining new bidding zones :
 - a. all affected TSOs shall participate in the process of defining new bidding zones within the studied region,
 - b. all affected NRAs shall accept or reject the new bidding zone definition proposal.
5. The affected TSO(s) participating in the regional process for defining new bidding zones shall:
 - (a) perform the new bidding zone delimitation study. This study shall be undertaken in a coordinated way at least on a regional level, unless paragraph 2 applies, and include market operators.
 - (b) propose a new bidding zone delimitation according to the principles defined in Article 39 [*Criteria to define and assess the efficiency of alternative bidding zone delimitations*], for NRA approval,
 - (c) take into account possible impacts on neighbouring regions,
 - (d) consult affected market participants about the new bidding zone delimitation proposal,
 - (e) provide an estimated timescale for implementation,
 - (f) give an opinion whether it is better to implement the new bidding zone configuration or keep the current configuration.
6. Each market participant shall, if requested to do so by TSOs, provide affected TSOs with the relevant information or contribution to the regional process for defining new bidding zones. This information shall be confidential and be shared between the affected TSOs only for the purpose of the study.
7. The affected NRA(s) participating in the regional process for defining new bidding zones shall:
 - (a) consult market participants about the proposal of new bidding zone delimitation and the time needed to prepare for the new bidding zone delimitation,
 - (b) take into account possible impacts on neighbouring regions,
 - (c) assess on a regional level the new bidding zone delimitation against criteria defined in Article 39 [*Criteria to define and assess the efficiency of alternative bidding zone delimitations*], and
 - (d) determine within 4 months after receiving proposal whether to :
 - (i) approve the new zone delimitation as proposed by TSOs,

- (ii) maintain the present bidding zone delimitation.
- 8. In the event that a proposal is approved by the affected NRAs following the procedure described in paragraph 7, TSOs and Market Operators shall implement the new bidding zone delimitation in the timescales specified in the approved proposal.

CHAPTER XX:

TRANSPARENCY AND PUBLICATION OF INFORMATION

Article 44

INFORMATION REGARDING THE CAPACITY CALCULATION PROCESS

1. The TSOs shall publish:
 - (a) Methodologies for calculating inputs to the capacity calculation process as defined in Section 2 of this document,
 - (b) A description of the capacity calculation methodology.
2. The TSOs shall keep the published documents under review and make changes as required to ensure their accuracy and accessibility.

Article 45

BI-ANNUAL REPORT ON THE CAPACITY CALCULATION PROCESS

1. No later than 2 years from the date at which this Regulation enters into force and every 2 years thereafter by end of June the ENTSO for Electricity shall prepare and send to ACER and all NRAs a report on the Capacity Calculation process, if requested by ACER.
2. The report on Capacity Calculation process shall, where applicable, for each bidding zone, border or region, at least contain:
 - (a) The Capacity Calculation methodology used;
 - (b) Statistical indicator on reliability margins, and
 - (c) Statistical indicators of the cross border capacity between bidding zones at each timeframe.
 - (d) Quality indicator for inputs used within Capacity Calculation process.
3. Following a request from ENTSOE, each TSO shall provide to the ENTSO for Electricity all necessary data to allow the preparation of the report, within 1 month