

Framework Guideline on Demand Response

20 December 2022

This Document contains the non-binding Framework Guideline on Demand Response, which the European Union Agency for the Cooperation of Energy Regulators (ACER) has prepared pursuant to Article 59(1)(e) of Regulation (EU) 2019/943 ('Electricity Regulation') and based on the request from the European Commission.

EU reference documents

- Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity, available at the following link: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32019R0943>
- Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019L0944>
- Commission Implementing Decision (EU) 2020/1479 of 14 October 2020 establishing priority lists for the development of network codes and guidelines for electricity for the period from 2020 to 2023 and for gas in 2020, available at the following link: https://eur-lex.europa.eu/eli/dec_impl/2020/1479/oj
- Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation, available at the following link: <https://eur-lex.europa.eu/eli/reg/2017/1485/oj/eng>
- Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing, available at the following link: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32017R2195>
- Commission Regulation (EU) 2016/1388 of 17 August 2016 establishing a Network Code on Demand Connection, available at the following link: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2016.223.01.0010.01.ENG
- Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators, available at the following link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32016R0631>
- 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, available at the following link: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32009R0714>
- All TSOs' proposal for the Key Organisational Requirements, Roles and Responsibilities (KORRR) relating to Data Exchange in accordance with Article 40(6) of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a Guideline on Electricity Transmission System Operation, available at the following link: https://eepublicdownloads.entsoe.eu/clean-documents/nc-tasks/SOGL/SOGL_A40.6_181001_KORRR_181015.pdf (proposal has been approved by

all regulatory authorities (<https://www.ceer.eu/documents/104400/-/-/e35e2077-56f1-a02d-92fb-a836e6ba428b>) on 19 December 2018).

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List of acronyms and abbreviations

| | |
|------------------------|---|
| BAL | Balancing markets |
| BSP | Balancing Service Provider |
| BRP | Balance Responsible Party |
| CACM Regulation | COMMISSION REGULATION (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management |
| CBA | Cost-Benefit Analysis |
| CDSO | Closed Distribution System Operator |
| DA | Day-ahead electricity markets |
| DCC Regulation | COMMISSION REGULATION (EU) 2016/1388 of 17 August 2016 establishing a Network Code on Demand Connection |
| DSO | Distribution System Operator |
| EB Regulation | COMMISSION REGULATION (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing |
| Electricity Directive | Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU |
| Electricity Regulation | Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity |
| FCR | Frequency Containment Reserve |
| FG | Framework Guideline |
| FRR | Frequency Restoration Reserve |
| ID | Intra-day electricity markets |
| KORRR | All TSOs' proposal for the Key Organisational Requirements, Roles and Responsibilities relating to Data Exchange in accordance with Article 40(6) of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a Guideline on Electricity Transmission System Operation (1/10/20218) |
| MS | Member State |
| NDP | Network Development Plan |
| NRA | National Regulatory Authority |
| RfG Regulation | COMMISSION REGULATION (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators |
| RPG | Reserve Providing Group |
| RPU | Reserve Providing Unit |
| RR | Replacement Reserve |
| SGU | Significant Grid User |
| SO | System Operator |

| | |
|---------------|---|
| SO Regulation | COMMISSION REGULATION (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation |
| SP | Service Provider |
| SPG | Service Providing Group |
| SPU | Service Providing Unit |
| TC | Terms & Conditions |
| TCM | Terms & Conditions or Methodology |
| ToE | Table of Equivalences |
| TSO | Transmission System Operator |
| TYNDP | Ten-year Network Development Plan |

1 General Provisions

1.1 Aim and applicability of the Framework Guideline on Demand Response

- (1) This FG on Demand Response is developed in order to set out clear and objective principles for the development of harmonised rules regarding demand response, including rules on aggregation, energy storage and demand curtailment (hereafter referred to as the “new rules”), pursuant to Article 59(1)(e) of the Electricity Regulation, and to contribute to market integration, non-discrimination, effective competition and the efficient functioning of the market pursuant to Article 59(4) of the Electricity Regulation.
- (2) Although demand response and storage are explicitly included in Article 59(1)(e) of the Electricity Regulation, the new rules shall be technology neutral and non-discriminatory and shall thus not favour demand response and storage to the detriment of other resource providers. Therefore, the new rules shall be applicable to all resource providers mentioned or covered in the articles referred to in Article 59(1)(e) of the Electricity Regulation. The new rules shall thus be applicable to load, storage (in particular when combined with load), and distributed generation, aggregated or not (hereafter referred to as “demand response and other relevant resources” or in general “resources”). No resource provider shall be excluded and the main aim of the new rules shall be to ensure access to all electricity markets for all resource providers.
- (3) In a similar way, although some of the articles referred to in Article 59(1)(e) of the Electricity Regulation only refer to DSOs, the new rules shall apply to all SOs (including TSOs), unless a different scope is explicitly mentioned. As concerns SO coordination, the new rules shall apply to DSO-DSO coordination and DSO-TSO coordination and exclude TSO-TSO coordination, as this is already covered sufficiently in the current legislation (in particular in CACM Regulation, EB Regulation and SO Regulation, which cover the coordination between TSOs in congestion management and capacity allocation in day-ahead and intraday timeframe, in the balancing timeframe and for system operation, respectively).
- (4) The principles set out in the new rules shall aim at allowing access of all resources to all electricity markets in accordance with the principles regarding its operation pursuant to Article 3 of the Electricity Regulation and allow the use of all resources by the SOs for operation and planning of the grid. Although electricity markets is a broad term covering all market-based processes related to electricity, including both retail and wholesale markets, including market-based procurement of balancing, voltage control and congestion management (hereafter referred to as “SO services”)¹, the assessment of which aspects of them fall in the scope of a European framework is crucial for the new rules. One of the most important criteria for such an assessment is the right balance between the need for European harmonisation, which is required to achieve the aims of the Electricity Regulation, and the MSs’ right to establish national network codes which do not affect cross-zonal trade, as reflected in Article 58(2) of the Electricity Regulation. Considering that the retail part of the electricity markets (i.e. the contractual relationship between the consumer and its supplier(s) or other market participants) relevant for this FG is mainly of national relevance, the new rules exclude it, and focus on the rest of the electricity markets. To this end, the FG aims at removing all undue barriers for the participation of these resources in all wholesale electricity markets (including those for procuring SO services), and establishing European principles for the assessment of the need for, the procurement of and the use of local SO services.

¹ In this document, we have considered the market-based procurement of SO services to be included in the wholesale markets.

This includes establishing clear and streamlined processes, roles and responsibilities on a European level, where relevant.

- (5) The new rules to be developed based on this FG shall respect the principles of non-discrimination and technology neutrality, whilst having due regard to the particularities of demand response, including aggregation, energy storage and demand curtailment and the potential needs resulting thereof for adapting current and future rules. The new rules shall be developed in line with this FG and be in line with or complement the relevant European legislation. At no point the new rules shall jeopardize grid security or the well-functioning and integration of electricity markets, and they shall contribute to the aims of the Electricity Regulation as set out in its Article 1, in particular Article 1(b).

1.2 Process

- (6) In accordance with Article 59(3) of the Electricity Regulation, Commission Implementing Decision (EU) 2020/1479² established a priority list for the development of network codes and guidelines for electricity for the period from 2020 to 2023. Article 1 of this Decision provides for the development of harmonised rules regarding demand side flexibility, including rules on aggregation, energy storage and demand curtailment rules. Subsequently to this decision, the European Commission invited ACER by letter of 21 October 2021, to launch a scoping exercise for the development of a network code based on Article 59(1)(e) of the Electricity Regulation³. ACER's results⁴ of the scoping exercise were sent to the European Commission on 1 February 2022.
- (7) In accordance with Article 59(4) of the Electricity Regulation, the European Commission invited, by a letter of 1 June 2022, ACER to submit a non-binding FG setting out clear and objective principles for the development of a network code on demand response, including rules on aggregation, energy storage and demand curtailment within six months from the date of receipt of this letter. This draft FG is the response to this letter.
- (8) This FG was subject to public consultation for two months pursuant to Article 59(5) of the Electricity Regulation and subsequently submitted to the European Commission in accordance with Article 59(6) of the Electricity Regulation.
- (9) The FG aims to ensure coherence with the existing regulatory framework by identifying provisions in the existing network codes and guidelines relevant for the requirements of the new rules; these provisions may have to be amended or extended in the context of the development of the new rules. Throughout the document, the relevant current European legislation that the new rules might complement is provided at the beginning of every Chapter/Section. These provisions should be considered indicative and by no means exhaustive.
- (10) Pursuant to Article 59(9) of the Electricity Regulation, the proposed new rules shall be developed in accordance with this FG. In particular, as set out in Article 59(11) of the Electricity Regulation, ACER shall, after receiving the proposed new rules, if necessary, revise them to ensure that they comply with this FG and contribute to market integration, non-discrimination, effective competition and the efficient functioning of the market.

²<https://op.europa.eu/en/publication-detail/-/publication/360fd436-0ead-11eb-bc07-01aa75ed71a1/language-en>

³https://extranet.acer.europa.eu/en/The_agency/Organisation/Expert_Groups/Electricity/2021%2010%2019%20scoping%20letter_final.docx%20vv.pdf

⁴https://extranet.acer.europa.eu/en/The_agency/Organisation/Expert_Groups/Electricity/Letter%20to%20EC%20on%20DSF%20scoping%20results_220201%20-%20Copy.pdf

1.3 Terms used in this document

- (11) The following definitions shall apply to this FG: definitions in Article 2 of the Electricity Regulation, definitions in Article 2 of the Electricity Directive, and definitions from all the respective Commission Regulations adopted on the basis of Articles 6(11) and 18(5) of Regulation (EC) No 714/2009⁵.
- (12) The following definitions are intended to further clarify the provisions of this FG and are without prejudice to the use of the terms in the current legal framework or to the definitions to be included in the new rules:
- (a) 'activation test' means a test whereby the SO sends an activation signal to the SP's assets during normal operating conditions to ensure that in case of need (and favourable market clearing) the resources can actually be activated, their capabilities meet the product requirements and the relevant data can be exchanged. Testing IT and communication requirements are out of the scope of the activation test.
 - (b) 'affected SO' means any SO affected by congestion, congestion management or voltage control issues on the grid of another SO, or whose grid may provide solutions to these issues or that data on the grid or the grid users are necessary to forecast, detect or solve such issues. The term is inspired by the definition of 'affected TSO' in Article 3(94) of the SO Regulation.
 - (c) 'baseline' means a counterfactual reference about what the SP's BRP⁶ allocated volume would be in the absence of the activation for the provision of the respective service.
 - (d) 'common SO proposal' means a common proposal from the SOs of a MS as described in paragraph (23).
 - (e) 'connecting SO' means the DSO responsible for the distribution network or the TSO responsible for the monitoring area to which a service providing unit or group is connected
 - (f) 'dispatch limitation' means a congestion management product whereby a service provider offers to limit the use of the firm connection capacity of a service providing unit or group prior to the determination of its dispatch, i.e. prior to closure of the day-ahead market.
 - (g) 'ex-ante prequalification' means the ex-ante process to verify the compliance of a potential service provider with the technical requirements set by the SO for the provision of a SO product (product prequalification) and where applicable, the process to verify the ability of the grid to technically accept the delivery of such a product (grid prequalification). In the product prequalification the SO may require the potential service provider to pass an activation test.
 - (h) 'ex-post verification' means the process that verifies the compliance of a qualified service provider with the technical requirements set by the SO for the provision of a SO product based on the service delivery and some verification criteria set by the SO.

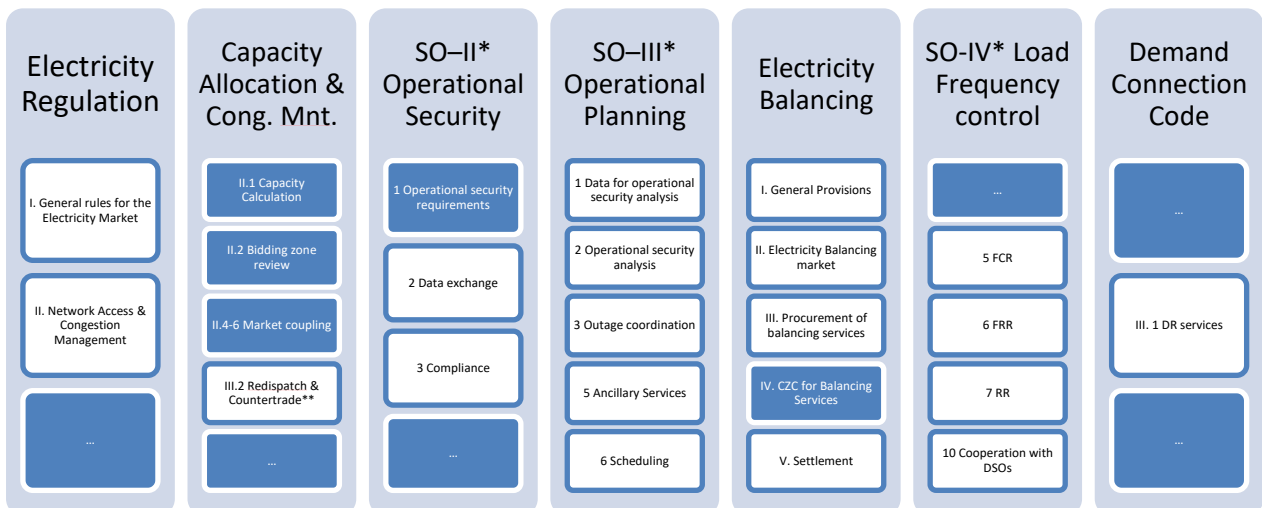
⁵ For broadly used terms, the respective references to the definitions are included as footnotes in this FG.

⁶ As defined in Article 2(7) of the EB Regulation.

- (i) 'interoperability' is the ability of two or more roles (a collection of responsibilities of a market participant in a set of procedures in the energy market) using energy or communication networks, systems, devices, applications or components to interwork to exchange information in order to perform required functions;
 - (j) 'local market for SO services' or 'local market' means a market where service providers offer products for local SO services.
 - (k) 'local service provider' means a service provider of product(s) for supplying local SO services.
 - (l) 'local SO services' means market-based procurement of congestion management or voltage control.
 - (m) 'metering point' means a physical location where the withdrawal and/or injection of active power is measured.
 - (n) 'redispatch products' means a congestion management product which can be activated after closure of the day-ahead market.
 - (o) 'requesting SO' (or 'procuring SO') means the SO (i) requesting data for detecting, forecasting and/or solving an issue (balancing, congestion, voltage) on its grid, and/or (ii) requesting the activation of resources for solving this issue.
 - (p) 'service providing unit' means a single unit or ensemble of units connected to a single connection point of a SO network where they inject and/or withdraw electricity fulfilling the requirements to provide SO services.
 - (q) 'service providing group' means an aggregation of units and/or service providing units connected to more than one connection point where they inject and/or withdraw electricity fulfilling the requirements to provide SO services either at connection point or aggregated level.
 - (r) 'service provider' means a market participant with a legal or contractual obligation to supply SO services from at least one service providing unit or service providing group.
 - (s) 'SO coordination area' means the area affected by an existing or forecasted congestion or voltage control issue, in particular with recurrent incidence.
 - (t) 'SO coordination group' means the group of the requesting SO and affected SOs, linked to one or several congestions or voltage control issues.
 - (u) 'SO services' means market-based procurement of balancing, voltage control and congestion management.
 - (v) 'standardised device' means an equipment that meets all technical requirements set by the SO for the provision of SO product according to the Original Equipment Manufacturer or other official certification authority.
- (13) The definitions in Article 2 of the Electricity Regulation shall apply to the new rules. When a term defined in the Electricity Directive is used in the new rules, the new rules shall include these definitions by including a direct reference to the respective definition in Article 2 of the Electricity Directive for defining the term.

1.4 Links and dependencies with existing legal provisions

- (14) At this stage, it is not yet determined whether the development of a European framework for demand response based on Article 59(1)(e) of the Electricity Regulation should also include amendments of existing network codes and guidelines. In any case, special attention should be paid to interactions with other regulations and potential additional amendments of them, in order to ensure overall coherence. It is important that the European framework as a whole supports the access of demand response and other relevant resources to all electricity markets.
- (15) In Figure 1, an overview of the relevant European legislation is provided, indicating in the white boxes the Chapters of each legislation that fall within the scope of the new rules to be developed (the blue boxes indicate other Chapters of the respective Regulations, which were assessed with respect to their relevance to the new rules, but at this point they are not relevant for the development of the new rules). The Regulations included here are: the Electricity Regulation, the CACM Regulation, the SO Regulation, the EB Regulation and the Demand Connection Code. At the beginning of every Chapter/Section in this FG, the Chapter(s) of the respective legislation that is considered to include relevant provisions for the new rules is included. These provisions should be considered indicative and by no means exhaustive.



* = due to the size of the SO regulation it was split into the three main parts II, III and IV in this overview

** = ACER Recommendation No 02/2021 of 17.12.2021 on CACM 2.0 proposes to move this Chapter and the provisions on CGM and GLDP to the SO part III on Operational planning

Figure 1: Provisions of the existing legal framework in the scope of the new rules – the white boxes denote the Chapters that are relevant for the provisions that shall be included in the new rules.

- (16) Two important aspects that need to be clarified with respect to the scope of the new rules are related to the topics of prequalification⁷ and congestion management. On prequalification, the scope of the new rules covered by this FG included technical requirements set by SOs for the provision of SO services while the technical capabilities of units for grid connection are out of the scope for the new rules. As a consequence, the provisions in the existing rules are in or out of the scope as follows:

- (a) The SO Regulation and EB Regulation regulate product and grid prequalification for TSO balancing services and are in the scope of this FG.

⁷ As defined in Article 3(146) of the SO Regulation.

- (b) The RfG Regulation describes an operational notification procedure and compliance testing or simulation for the connection of new generators to the distribution or transmission networks. The RfG Regulation only describes capabilities that are checked during the connection phase of the unit to the grid and are not directly related to the services that the unit can provide to the SOs. Since the RfG Regulation does not provide any requirements on services to relevant SOs but technical capabilities of new generators, the operational notification procedure and compliance testing/simulation are not considered as a “prequalification process” for services offered to the SOs by generators, thus RfG Regulation is considered out of the scope of this FG.
 - (c) Title III of the DCC Regulation defines the connection of demand units used by a demand facility or a closed distribution system to provide demand response services to SOs. The DCC Regulation describes technical capabilities for the connection of demand units to provide demand response services to SOs, with the exception of some requirements described in Articles 28 to 30 for the demand response services set in Article 27. For the sake of clarity, since the connection to the grid is a different aspect from the provision of services to SOs, this FG recommends carrying over the technical requirements to provide demand response services from the DCC Regulation to the SO Regulation. As a result, the scope of the RfG and DCC Regulations would be limited to capabilities for grid connection while all requirements set in prequalification processes for the provision of SO services would be in the SO Regulation.
- (17) On congestion management, the scope of the new rules covered by this FG need to consider that congestion management is a wide topic described in several parts of the existing European legal framework⁸. It is also an important part of this FG. However, the scope of this FG as concerns congestion management is restricted to the procurement and activation by an SO of products for solving local physical congestions within a bidding zone and/or network area on short term and/or on long term and either ex ante (preventing the congestion based on a forecast) or ex post (solving a congestion that will occur if not remedied), without restricting the MSs’ possibility for non-market-based redispatching, as envisaged in Article 13 of the Electricity Regulation, given that the conditions described in the same Article are fulfilled. Thus, other mechanisms for solving structural congestion, such as the allocation of cross zonal capacities and the review of bidding zones, are not to be replaced, but rather complemented, by the processes described in this FG, where the MSs choose so. In this FG, when referring to congestion management, we only consider the use of market-based SO services to manage physical congestion, unless something else is explicitly mentioned.

⁸ Most notably in Chapter II of the Electricity Regulation on network access and congestion management.

2 General requirements for market access

- (18) As explained in Section 1.1, the main aim of the new rules is to ensure access for demand response and other relevant resources to all electricity wholesale markets. Although in principle and pursuant to the requirements of the Electricity Directive, the participation of demand response and other relevant resources to all electricity markets should be enabled at national level, there are aspects that need to be further specified and clarified at European level, to ensure a level playing field for the participation of these resources in the electricity wholesale markets.
- (19) It is important to note that this FG considers the deployment of smart meters as a key for enabling the full potential of the participation of these resources in all electricity wholesale markets. At least where the deployment of the smart meters is delayed, the new rules shall specify the conditions for the usage of sub-meters, in order for the new rules to become effective. This does not mean that the use of sub-meters should only be restricted to the cases where smart meters have not been installed. Moreover, in order to ensure non-discriminatory access to the markets, the new rules shall specify the different models under which these resources may participate, and clarify the roles and responsibilities under each context. These general requirements, which are considered relevant for ensuring equal access of these resources to all electricity wholesale markets, are included in this Chapter.
- (20) Moreover, in order to accommodate the specificities of the integrated scheduling process⁹, the new rules shall include different provisions for central dispatching model¹⁰ where this is necessary.

2.1 Roles and responsibilities

Chapter II of the Electricity Regulation sets the general rules for the electricity market. More specifically, its Article 5 includes the provisions for balance responsibility and Article 6 the provisions for the balancing market.

Title II of the EB Regulation sets the requirements for the electricity balancing market, and Title III sets the requirements for the procurement of balancing services. Title V of the EB Regulation sets the requirements for the settlement of the balancing services.

- (21) Article 18 of the EB Regulation requires TSOs in coordination with the affected DSOs to develop TC related to balancing including TC for BSPs¹¹ and for BRPs on a MS level. The new rules shall require these TC to specify the processes for all potential market participants to offer balancing services, including those engaged in aggregation as well as demand response and storage. These processes shall include at least the requirements for all market participants, including those engaged in aggregation as well as demand response and storage, for becoming BSPs, for the settlement of balancing services, for the balance responsibility and for the settlement of imbalances. Moreover, in order to enable access to all balancing markets, the new rules shall reduce the minimum bid granularity at least for the first bid of each BSP to not higher than 0.1 MW for all balancing capacity and accordingly for all balancing energy products, based on the respective market time unit, and set a clear timeline for the implementation of this change. The new rules shall set out a derogation process for MSs for not applying the minimum bid granularity requirement mentioned in the previous sentence, including a clear timeline for a cost benefit analysis to be performed by

⁹ As defined in Article 2(16) of the EB Regulation.

¹⁰ As defined in Article 2(18) of the EB Regulation.

¹¹ As defined in Article 2(6) of the EB Regulation.

the TSO(s) of the concerned MSs, and regular re-assessments to ensure that the derogation is lifted in case the outcome of the analysis is changed. In particular, the new rules shall specify the process to verify the provision of balancing energy, including the data that should be exchanged between the TSO and the BSP, and the settlement of the provided balancing energy, by amending the provisions of Title V, Chapter 2, of the EB Regulation, with respect to the balancing energy volume, taking into account the different resource providers, as well as the aggregation models described in the next paragraph.

- (22) Moreover, the new rules shall define, in accordance with the definitions provided in Section 1.3, the terms SPU, SPG, and SP for any market participant providing any SO services (for any or both the TSO and the DSO). In this context, the new rules shall require TSOs and DSOs to develop TC related to the SO services on a MS level, i.e. terms and conditions for SPs (Deliverable 1 in Table 1). Although in the remainder of this document the term “TC for SPs” is used collectively for all SO services, it is acknowledged that TC for SPs related to local SO services (TC for local SPs) may be separate from those related to balancing (TC for BSPs). The new rules shall require these TC to specify the processes – at least for becoming SPs and for the settlement of SO services – for all potential market participants to offer these SO services, including those engaged in aggregation as well as demand response and storage. With respect to the processes for becoming SPs, the new rules shall require these TC to specify the ex-ante prequalification process and ex-post verification process for balancing products, congestion management products and voltage control products. Furthermore, the new rules shall include provisions for assigning and/or delegating SO’s tasks related to balancing, congestion management and/or voltage control, if decided or allowed by the MS or relevant regulatory authority.
- (23) The new rules shall also specify the approval process at MS level for establishing roles, responsibilities and in general for the adoption of the processes described in this FG. This approval process shall include the development of a common SO proposal, in accordance with the respective national process. The new rules shall require that, in each MS, there is a formal process for establishing common SO proposals. The new rules shall specify aspects of the process for the development of the common SO proposals, related to the deadline for their submission and their approval by the NRA¹², and to the requirements for the involvement of stakeholders. The new rules shall allow the NRA to give a derogation from approved common SO proposals in order to test other concepts before any possible inclusion of the concept in an amended common SO proposal, and shall define the maximum period for such derogation. The new rules shall also ensure that, in case of a derogation, the resulting new experience is transparently shared and made accessible to all interested stakeholders. Moreover, in case a load frequency control area expands across more than one MS, the new rules shall specify that if the relevant regulatory authorities jointly request all SOs of that LFC area to develop common proposals, these SOs submit these common proposals to the relevant regulatory authorities for a coordinated approval.
- (24) The new rules shall define a process for further harmonisation on a European level when MSs gain more knowledge and experience on the different areas of this FG, whenever this is explicitly referred in the sections below (paragraphs (29), (52), (98)). This process shall also include a relevant monitoring report for each of the areas, assessing the need for harmonisation in the relevant topics of each area, defining objective and measurable indicators to assess this need separately for each area, taking also into account different regional specificities. Given the different maturity of the implementation of the legislative framework for the areas/topics, the new rules shall include specific items that could be

¹² Whenever NRA is referred as the approval authority, it should be understood as any competent authority or authorities appointed with this task at the MS level.

harmonised in each area. Moreover, the new rules shall specify i) the process to be followed by SOs for developing proposals for EU methodologies for further harmonisation for each of the areas, when the need for further harmonisation is identified, as well as ii) the process for amending the national TC afterwards.

- (25) The new rules shall establish a European stakeholders committee, with representatives from ACER/NRAs, ENTSO-E/TSOs, EU DSO Entity/DSOs, and affected stakeholders, to follow the implementation of the new rules, identify problems and propose improvements related to the areas covered in the new rules.
- (26) For data exchange between SOs and the SOs and the SPs for the provision of SO services:
- (a) The new rules shall ensure that the data requirements are limited to necessary and usable data and shall provide that the necessary and usable data may evolve over time since more SOs services are procured and SOs develop more capabilities for the use of data. The level of granularity of the data requirements shall be proportionate and adapted to the justified technical needs of the SO product.
 - (b) The new rules shall ensure a secure, non-discriminatory, efficient and effective data access and exchange between all the relevant parties while guaranteeing user's data is safeguard and compliant with all data privacy and protection rules and while avoiding sharing sensitive data that could favour unwanted emerging opportunities for gaming and/or market abuse. The new rules shall also ensure standardisation of the processes for data access and exchange including standardised data exchange formats. In addition, the new rules shall provide principles on data transparency and traceability. The new rules shall specify how, when, and for what purpose the SPs data is used, who has the permission to access it and the process through which this information is available to the SP. The new rules shall provide additional requirements for neutrality, transparency and protection of confidential data from SPs and SOs to be applied to DSOs that are not unbundled according to Article 35 of the Electricity Directive.
 - (c) The new rules shall require data quality controls to guarantee that all relevant parties provide up-to-date, correct and precise data. For data exchanges, the new rules shall include provisions in case the communication fails between the relevant parties.
 - (d) The new rules shall establish principles for interoperability on national level and shall ensure coherence with the interoperability rules for access to data for demand response, not multiplying interfaces, in order to reduce costs.

2.2 Aggregation models

Article 17 of the Electricity Directive sets the requirements for the participation of demand response through aggregation. In particular, Article 17(3) of the Electricity Directive lists the elements that such a regulatory framework should address.

- (27) The new rules, respecting the requirements set in Article 17(3) of the Electricity Directive, shall describe this grouping of the different aggregation models as an exhaustive list of the possible types of aggregation models that may be applied by the MSs, distinguished based on the number of BRPs per connection point and per metering point, as well as on the basis of the type of the applied compensation mechanism, if a compensation mechanism is applied. In particular, the new rules shall specify the roles, responsibilities and interactions of the market participants under each of the possible types of aggregation models, including the data exchanged with the SO(s) needed for accessing all electricity wholesale markets, the responsibilities for verifying the provision of the SO service, for informing the BRP(s) after activation of an SO service and for the settlement of the provided SO service. Regarding the

settlement, the new rules shall indicate for each type of aggregation model, whether a financial compensation in line with Article 17(4) of the Electricity Directive applies; this financial compensation is considered to be separate from any correction that is deemed necessary in the volumes attributed to the respective BRP(s) in the context of the imbalance settlement¹³, as described in Section 2.4. The new rules shall ensure that the energy activated for the provision of the service is not double counted and it is attributed to the respective BRP(s), in line with the requirements of Article 5 of the Electricity Regulation.

- (28) The new rules shall further specify the requirements of Article 17(4) of the Electricity Directive, for the specific types of aggregation models, which include a financial compensation. The new rules shall specify the parties involved in the financial compensation and the direction of the financial compensation in each aggregation model type, taking into account the relevant correction actions that have already been taken in the context of the imbalance settlement (either in the final position, the allocated volume or the imbalance adjustment¹⁴ of the involved BRPs), as described in Section 2.4. In particular, the new rules shall specify the payer of the financial compensation; the receiver of the compensation is the supplier of the final customer, given that the appropriate correction actions (which may be in both directions) have already been performed during imbalance settlement. The new rules shall ensure that the financial compensation is not creating a barrier for market participants engaged in aggregation. In doing so they shall include an exhaustive list of the possible *“resulting costs incurred by the suppliers of participating customers or the suppliers’ balance responsible parties during the activation of demand response”*, which may be different for each aggregation model type, and a description of the *“benefits brought about by the independent aggregators to other market participants”* that may be taken into account.
- (29) The new rules shall also define a European-wide process, as described in paragraph (24), including specific deadlines, for further specifying and harmonising the main elements of the possible types of aggregation models, once more experience is gained in the functioning of the different models, as well as in the operation of the integrated balancing markets. The monitoring report (Deliverable 2 in Table 1) and the proposal for the EU methodology (Deliverable 3 in Table 1), which are envisaged in the process described in paragraph (24), for the area of the aggregation models shall assess the different options for further specifying and harmonising the main elements of the types of aggregation models (including reducing them), when the need for further harmonisation is identified, while assessing the benefits in achieving the aims of the Electricity Regulation pursuant to its Article 1.

2.3 Provision of the service: baseline and measurement

Title V of the EB Regulation sets the requirements for the settlement of the balancing services including the provisions for the calculation of balancing energy (Chapter 2).

- (30) It is acknowledged that, in the context of demand response, when the customer is not the SP (i.e. an aggregator is the SP), there are two general fields of application of the concept of baseline: one linked to the contractual relationship between the customer and the aggregator, and the other linked to the relationship between the aggregator and the SO. In this FG, the baseline is considered from the perspective of the SO in relation to the SP, hence only the second case is relevant and the scope is limited to that. Under this assumption, the baseline represents a counterfactual reference about what the SP’s BRP

¹³ As defined in Article 2(9) of the EB Regulation.

¹⁴ As defined in Article 2(14) of the EB Regulation.

allocated volume would be in the absence of the activation for the provision of the respective service, in order to quantify and measure the actual delivery of the service.

- (31) The new rules shall clarify that the baselining approach for validating the activation is not mandatory and SOs can implement alternatives, such as taking the final position of the SP's BRP as the baseline, to be used as reference for the delivery of the service¹⁵. For the models where the baseline is assumed as reference for checking the delivery, the new rules shall define general principles for its establishment, at national level, to be followed by SOs, but without necessarily setting a harmonised European methodology. A process for achieving further standardisation in the future shall be included, subject to an assessment of the benefits in achieving the aims of the Electricity Regulation, although the target is not to have one baseline per product and per timeframe. The new rules shall establish the high-level principles for the baseline methodology, ensuring that it is easy to implement, transparent and accurate. The principles shall prevent gaming opportunities based on manipulation of the baseline. Preference shall be given to calculation methods that are objective, in order to make the baseline calculated replicable and non-manipulable, but rules shall also allow for other alternatives, such as forecast by the SPs, if there is a procedure for ex-post check of the accuracy. The baseline methodology could be different depending on the products exchanged and the timeframe, in order to adapt the best calculation to the specific case, and the time granularity should be coherent with the one of the relevant products.
- (32) The new rules shall define the minimum content to be included in the TC for SPs (Deliverable 1 in Table 1), regarding the baseline methodology and the processes for its definition, calculation and validation. The new rules shall provide a clear framework for the validation of the baseline, to ensure that it is as consistent as possible with the actual profile of the resources. This could include ex-post analysis by the SOs, ex-ante adjustment coefficients based on real time measurements (e.g. difference between baseline and measurements in the previous time periods).
- (33) If the control of the provision of an SO service is based on measurement, the granularity of the meter needs to be at least equal to 15 min, which is the harmonised imbalance settlement period. The new rules shall describe the conditions for the use of sub-metering for the measurement of the provision of the service. The new rules shall define sub-meters, shall set up principles for the use of the data in order to avoid manipulation, shall include provisions i) for the respective roles, ii) for the collection of the data, iii) for the verification of the accuracy of the measurements, and iv) for the compliance with relevant standards, ensuring the coherence with the interoperability rules for access to data for demand response.
- (34) For the settlement related to the provision of the SO-related services, the new rules shall include provisions covering the data exchange between any SP and the respective SO, respecting the general principles included in paragraph (26). More specifically, the new rules shall include provisions for the data exchange between the SP and the SO(s) related to the provision of the service and the validation, including the baseline related data, where this is required, at least for each aggregation model if this is relevant. The new rules shall specify what data needs to be communicated after real-time and shall clearly define the entity that receives the data, which shall ensure real-time validation of the received data and real-time communication to the SP in case errors (missing data, wrong format, erroneous data) are detected. The data shall include at least the activated energy volumes for each SPUs and/or SPGs for the different products and services.

¹⁵ This is known as the “buy your baseline” principle.

- (35) Moreover, the new rules shall ensure consistency among the volumes involved, position of BRPs, imbalance adjustment (taking also into account the requirements of the following Section), the service provided, and ensure that there is no uncertainty on measurements and allocation of corrections, especially when the aggregator and the BRP are different entities.

2.4 Imbalance settlement

Articles 5 and 6 of the Electricity Regulation set the requirements for balance responsibility and balancing markets.

Title V of the EB Regulation sets the requirements for the settlement of the balancing services including the imbalance settlement. In particular, it includes general principles (Chapter 1), provisions for the calculation of balancing energy and the imbalance adjustment (Chapter 2), and the imbalance settlement (Chapter 4).

- (36) The new rules shall help all market participants (including SPs) to develop demand response behind the metering point(s) of a connection point and multiple market participants (including SPs) to be simultaneously active behind the metering point(s) of a connection point, by specifying all the aspects of the imbalance settlement including the calculation of the position, the allocated volume, the imbalance adjustment and the imbalance, for all the activations by the SOs as well as for all the market participant, including all the different aggregation models. The new rules shall define “metering point” as a physical location where the withdrawal and/or injection of active power is measured. The metering point(s) of a connection allocate withdrawal and/or injection to the BRP(s) responsible for the imbalances on that connection.
- (37) The new rules shall distinguish between the imbalance adjustment of the BRP(s) of the market participants (including SPs) behind the metering point(s) of the connection point, and the adjustments to the allocated volume of the BRP(s) responsible for the imbalances on the connection point, differentiating the respective calculations, depending on the applicable aggregation model, but in any case ensuring consistency among the volumes involved, in order to avoid free-riding.

2.5 SO-owned storage facilities

- (38) Articles 36 and 54 of the Electricity Directive establish criteria for SO-owned storage. The new rules shall provide a clear framework that ensures that demand response and other relevant resources are preferred over TSO and DSO-owned storage.
- (39) As described in Article 36(2)(a) and Article 54(2)(a) of the Electricity Directive (), SO-owned storage is allowed under the condition that *“other parties, following an open, transparent and non-discriminatory tendering procedure that is subject to review and approval by the regulatory authority have not been awarded a right to own, develop, manage or operate such facilities, or could not deliver those services at a reasonable cost and in a timely manner”*. The new rules shall specify criteria to be fulfilled by the tendering procedure in order to be approved by the NRA, including:
- (a) Participation conditions shall enable participation of demand response and other relevant resources that can deliver the services needed by the SOs to fulfil their obligations for the efficient, reliable and secure operation of the transmission and/or distribution system, in addition to storage participation.

- (b) The tender shall include the possibility of shared ownership and operation of a storage facility between the SO and a third party, as a “second best” solution to the SO procuring the total needed service from a third party.
- (c) Selection criteria shall be technology-neutral and select the best techno-economic option for each particular case, maximizing social welfare including when comparing to an SO-owned storage facility.
- (d) Transparency of the selection criteria and the results of the tender.
- (e) Clear communication on the technical conditions of the tender, including as much information as possible for the potential SPs to prepare an adapted offer, such as the foreseen utilisation pattern and expected volumes, and with sufficient granularity.
- (f) Clear communication on economic conditions of the tender. The transparency on the economic conditions shall be balanced against the potential impact on the pricing of the offers.

The specifications of the tender shall be submitted to public consultation and to NRA approval prior to the tendering process. Further criteria to be fulfilled by the tendering procedure shall be defined at national level. After the tender, the NRA may grant a derogation or a partial derogation (for shared ownership) if a third party cannot deliver the service at a reasonable cost and in a timely manner. In this case, the partial derogation shall be preferred if economically efficient.

- (40) The new rules shall specify that in case of shared ownership and/or operation of the storage facility, the SO part of the ownership and operation of the storage facility is submitted to the same conditions as announced in the previous paragraph and in Articles 36 and 54 of the Electricity Directive. The third party shall own and operate the rest of the storage freely. The sharing may be based on a percentage, a sharing in time, season, capacity, output or any other clearly defined sharing deemed useful. The new rules shall establish that the ownership and contractual relations (for use of the facilities, distribution of costs etc.) between the SO and the third party are approved by the NRA and made public in a transparent manner. After the tender, the NRA may discard the possibility of shared ownership if deemed economically inefficient. The assessment and the rationale behind it shall be made public in a transparent manner.
- (41) Article 36(3) and Article 54(4) of the Electricity Directive provides that *«The regulatory authorities shall perform, at regular intervals or at least every five years, a public consultation on the existing energy storage facilities in order to assess the potential availability and interest in investing in such facilities. Where the public consultation, as assessed by the regulatory authority, indicates that third parties are able to own, develop, operate or manage such facilities in a cost-effective manner, the regulatory authority shall ensure that the [distribution/transmission] system operators' activities in this regard are phased out within 18 months»*. The new rules shall ensure that these requirements are fulfilled if:
 - (a) the public consultation shows that third parties can, and are willing to, provide the services that the SO needs from the storage facility, be it by taking over the SO-owned storage or by other means, such as demand response or other relevant resources; and
 - (b) a CBA shows that it is preferable to phase out of the SO storage and purchase the necessary services from third parties rather than continuing the SO storage activity.

The new rules shall provide guidance for the scope of the abovementioned CBA, ensuring in particular that the scope in time and in topics is broad enough to take into account the potential loss of developing markets for SO services and the consequences thereof. The public consultation shall include an updated evaluation of costs compared to the estimated costs of SO-ownership in the tender that lead to the derogation. The new rules shall establish

that such consultation shall take place every second year and be aligned with applicable grid planning processes such as NDP.

3 Prequalification

The SO Regulation regulates product and grid prequalification for TSO balancing services. Titles 5, 6 and 7 of Part IV set the prequalification process and the minimum technical requirements for FCR, FRR and RR, respectively. Title 9 of the same part sets the cooperation with DSOs during prequalification of RPU or RPGs connected to the DSO grid.

3.1 General principles, requirements and processes

- (42) For all SO services, the new rules shall take into account the different concepts associated to the prequalification of SPUs and SPGs and to the qualification of SPs as follows:
- (a) Where applicable, a grid prequalification aiming at verifying that the delivery of a service can be technically supported by the connecting grid and any intermediate grids. The new rules shall describe the assessment criteria and the process to perform a grid prequalification. The new rules shall also clarify the concept of conditional or long term grid prequalification and shall define the principles and criteria allowing SO to set limits under this type of grid prequalification. These criteria shall be public, transparent, verifiable and accurate. The new rules shall also define the main roles of the different SOs involved in grid prequalification.
 - (b) A SP qualification aiming at verifying its capability to deliver a service having the adequate communication tools or having the SP data correctly registered together with the associated units, among others. The new rules shall define the main qualification criteria for SPs that shall be further clarified in TC for SPs (see paragraph (22) and Deliverable 1 in Table 1).
 - (c) A product prequalification aiming at verifying the compliance of the asset(s) of the SP to the technical requirements of the service. The new rules shall define the process where, when justified upon NRAs approval, SOs may perform an activation test to confirm that the SP's asset(s) can deliver the requested product. At least for small SPUs and small SPGs, the new rules shall limit the activation tests unless it is technically needed to ensure the system security and grid operation.
- (43) The new rules shall guarantee that the following principles apply to all products requiring an ex-ante product prequalification (see Section 3.2):
- (a) The burden of the prequalification process shall be proportionate to the size of SPUs or SPGs and its impact on the system security and grid operation in case of non-delivery.
 - (b) The prequalification processes shall be user-friendly, non-discriminatory, fair, objective, transparent and striving to minimise and standardise the different steps when possible. In addition, the new rules shall define some mechanism to guarantee a level playing field between forecastable stationary assets and mobile assets.
 - (c) The prequalification requirements shall be limited to the technically necessary level to ensure system security and safe grid operation and shall not create entry barriers for small units. The prequalification requirements can vary among different services and products; however, a higher standardisation of products shall lead to a higher harmonisation of the technical requirements.
 - (d) When an activation test is needed, it shall be executed by a single SO in cooperation with the concerned SOs. The new rules shall clarify which single SO executes the test, including when multiple SOs procure the same product.
 - (e) Delegating the task of conducting a prequalification process or activation test (when applicable) to a third party shall be allowed.

- (44) The new rules shall set minimum technical requirements for the provision of products for local SO services. The new rules shall set a minimum EU harmonisation in the different steps and lead times in the prequalification processes for these products. When an ex-ante product prequalification is justified at national level for these products (see Section 3.2), the specifications of this process and additional technical requirements shall be defined by SOs within each Member State in the TC for local SPs (see paragraph (22)).

3.2 Simplification of the product prequalification processes

- (45) For standard balancing products¹⁶, the new rules shall define a unique and common prequalification process per product for different situations with the same steps, lead times and as many technical requirements as possible. To define this prequalification process, the new rules shall consider the following principles and requirements:
- (a) The first-time prequalification of potential RPU¹⁷ and RPG¹⁸ shall be simplified when they comprise units identical to other prequalified RPU and RPG for the same product.
 - (b) Only the changes in prequalified RPU and RPG that are relevant for the service provision shall be subject to a new prequalification process. The new rules shall define criteria to consider changes as relevant so as to ensure a level playing field. The prequalification processes needed after significant changes in prequalified RPU and RPG shall be simplified and lightened, including a reduction in the steps and lead times.
 - (c) The prequalification activation tests shall be minimised, particularly for small units. For RPG, if technically and practically possible for both the TSO and the BSP, these activation tests shall be required i) only on the new or changed connection points and ii) on all these connection points as a whole.
- (46) For specific balancing products¹⁹ and products for local SO services, the new rules shall require to perform an ex-post product verification process by default. The new rules shall define this process considering the following principles and requirements:
- (a) An ex-ante activation test shall not be a prerequisite to provide the product.
 - (b) The procuring SO may perform an ex-post product verification based on the service delivery and some verification criteria. The new rules shall define different options for these ex-post verification criteria including the possibility to verify service delivery based on a minimum number of deliveries. The national TC for SPs shall indicate the ex-post verification criteria chosen for each product.
 - (c) This ex-post verification process shall not require to pass any ex-post activation test for verification. The national TC for SPs shall set the minimum number of service deliveries and the maximum timeframe for the procuring SO to perform this ex-post verification for each product. If the minimum number of deliveries is not reached in the maximum timeframe proposed, the TC for SPs may include the possibility to perform an ex-post activation test for verification, specifying who may request this test and who bears the corresponding costs.

¹⁶ As defined in Article 2(28) of the EB Regulation.

¹⁷ As defined in Article 3(10) of the SO Regulation.

¹⁸ As defined in Article 3(11) of the SO Regulation.

¹⁹ As defined in Article 2(36) of the EB Regulation.

- (47) The new rules shall define the technical criteria that will allow SOs to deviate from the ex-post product verification process and thus perform an ex-ante product prequalification process at SPU or SPG level as a prerequisite to provide the product.
- (48) For all products for SOs services, regardless of the process applicable:
- (a) The new rules shall guarantee that the requirements to make data available in real-time and supply real-time measurements do not hinder the participation of small units and that an adequate refresh rate is required.
 - (b) The new rules shall propose some mechanisms to facilitate switching of small units between SPs or between SPUs or SPGs under the same SP.
- (49) The new rules shall provide that the TC for SPs aim at simplifying the access to SO services and avoiding duplications when prequalification processes are technically justified according to the new rules. They shall describe the ex-post verification processes and the ex-ante prequalification processes used for each product for different situations and shall define the step-wise implementation of the process and the set of standardised procedures for data exchange in the ex-ante prequalification phase as set in Section 3.4. The TC for SPs shall define a process and timeline for a national harmonisation of the IT and communication requirements set in the ex-post verification processes and ex-ante prequalification processes.
- (50) The new rules shall define principles and requirements striving to minimise the effort, resources and time from the SPs when they are required to perform an ex-ante prequalification process at SPU or SPG level as a prerequisite to provide a product according to the national TC for SPs. To define these prequalification processes, the new rules shall consider at least the principles and requirements set in paragraph (45).
- (51) For standard balancing products and for other products subject to ex-ante prequalification in accordance with national TC for SPs:
- (a) the new rules shall define conditions such as an adequate threshold to exempt small units from passing ex-ante activation tests at individual unit level.
 - (b) the new rules shall define conditions to ensure that the standardised devices are exempted from passing ex-ante activation tests. The new rules shall also define some mechanisms to simplify the product prequalification process for these devices.
- (52) The new rules shall define a European-wide process, as described in paragraph (24), including specific timelines, for further simplification of the ex-ante product prequalification processes, once more products for SO services are defined, and the need for further harmonisation is identified. The monitoring report (Deliverable 4 in Table 1) and the proposal for the EU methodology (Deliverable 5 in Table 1), which are envisaged in the process described in paragraph (24), shall identify cases where ex-ante product prequalification can be replaced by ex-post verification and simplifications in the processes, requirements and activations tests where applicable, including specific simplifications for small units and standardised devices. They shall also define a cross-zonal table of equivalences (ToE) identifying equivalences between the national ToEs (see Section 3.3) for products for SO services with similar prequalification requirements across MSs.

3.3 Avoid duplications in product prequalification processes

- (53) For standard balancing products and for products where an ex-ante product prequalification process is justified in the national TC for SPs (see Section 3.2 and Deliverable 1 in Table 1):
- The new rules shall guarantee the product prequalification to be required only once if multiple SOs procure the same product.
 - The new rules shall define the principles and requirements for SOs to define a ToE between the technical requirements of each product requiring an ex-ante product prequalification process and procured within each MS.
- (54) The new rules shall require the national TC for SPs to propose the first concept of ToE.
- The ToE shall map all technical requirements of the ex-ante product prequalification processes.
 - The new rules shall define a common list of comparable attributes between the different products for SO services. The national ToE shall identify equivalences between the technical requirements for each product, including product and data exchange requirements and shall rank the more and less challenging requirements. The voltage level of each product shall be considered when setting the equivalences.
 - Based on the equivalences, the new rules shall define a procedure to avoid duplications in prequalification processes.
 - The new rules shall provide that SOs will keep the ToE up to date and that it will be public. When defining a new product for SO services where an ex-ante product prequalification process is justified in the national TC for SPs, the SOs shall include the technical requirements in the ToE and shall implement the procedure to avoid duplications.

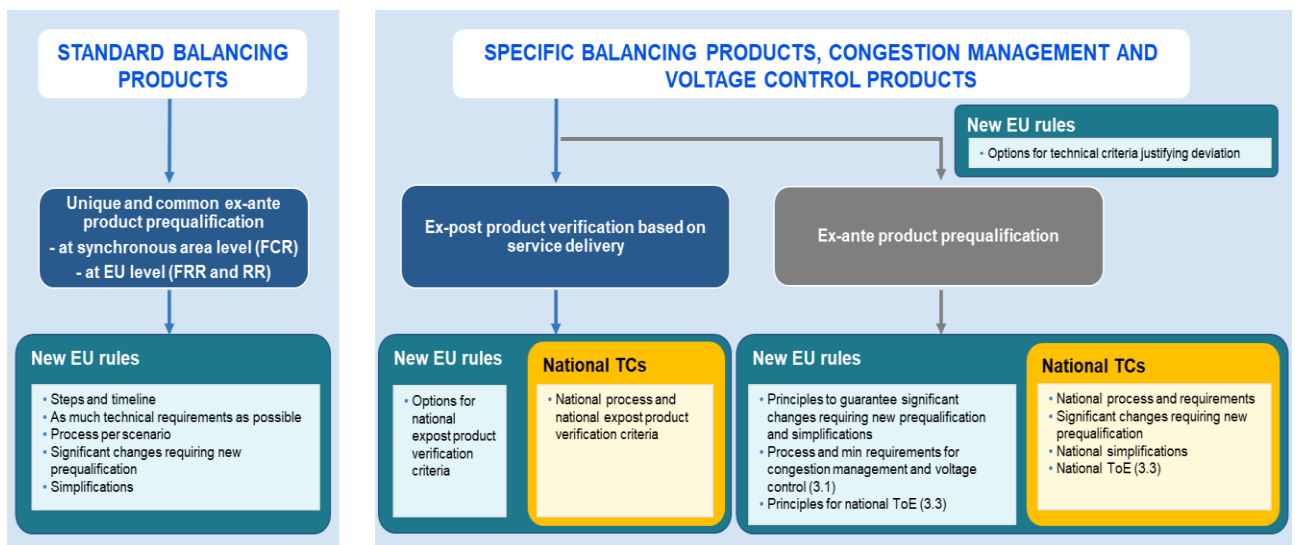


Figure 2 Overview of the ex-ante product prequalification and ex-post verification processes proposed to access the different products for SO services.

3.4 Data exchange in the ex-ante prequalification phase

Title 2 of the SO Regulation regulates data exchange with TSOs for TSO-related services. In particular, Chapter 5 regulates data exchange between TSOs, owners of interconnectors or other lines and power generating modules connected to the transmission system and Chapter 6 regulates data exchange between TSOs and demand facilities.

As set in Article 40(7) of the SO Regulation, the KORRR methodology addresses the key roles, requirements and responsibilities of the TSOs, the DSOs, the CDSOs and the SGUs in relation to the data exchange up to real time that is necessary to ensure observability. The roles, requirements and responsibilities developed in KORRR apply to all data exchange provisions in Title 2 of the SO Regulation.

- (55) The new rules shall provide principles and requirements to define a process at national level in order to define a future-proof concept for data exchange aiming at:
- (a) Streamlining the application processes and prequalification processes (if applicable) for both SPs and SOs;
 - (b) Ensuring seamless TSO-DSO data exchange and a coordinated access to all potential available resources; and
 - (c) Guaranteeing economic efficiency avoiding investments in the development of individual platforms, applications or registers not being interoperable.
- (56) In particular, this national process shall guarantee that:
- (a) All SPs have a single and common front-door to apply for the products where they are willing to participate and to pass prequalification processes when applicable.
 - (b) For the SOs who have some kind of application or platform for SPs to apply for participation, prequalification or registration in different SOs services, the process aims at achieving interoperability across the different applications, platforms or registers as well as with the front-door for the SPs.
 - (c) For the SOs who do not have any kind of application or platform for SPs, the process defines an efficient solution to allow data exchange with other SOs.
- (57) In addition, the new rules shall provide principles and requirements to define a set of procedures at national level aiming at guaranteeing that all SPs and SOs exchange data in an efficient and standardised way. In particular, this set of procedures shall standardise:
- (a) The procedure for SPs to apply for participation in different products;
 - (b) The procedure for SPs to pass the prequalification processes, if applicable;
 - (c) The registration of SPs who are qualified to participate in different products; and
 - (d) The procedure for data exchange between SOs procuring different products.
- (58) The new rules shall require the TC for SPs (see paragraph (22) and Deliverable 1 in Table 1) to define a step-wise implementation of the national process and set of procedures until guaranteeing full interoperability.
- (59) The new rules shall set principles to ensure the national concept is easy-to-implement and user friendly for both SOs and SPs. The new rules shall ensure that the application process for qualification, prequalification and ex-post verification is fully digital and the set of national standardised procedures guarantee a streamlined and harmonised method for providing documentation in the qualification, prequalification and ex-post verification processes.
- (60) In line with paragraph (26), the new rules shall define principles for data governance to be considered at national level when defining the set of standardised procedures.

4 Data exchange and SOs coordination

4.1 Market interaction

Chapter II of the Electricity Regulation sets the general rules for the electricity markets, while the CACM Regulation sets the requirements for congestion management and capacity allocation in day-ahead and intraday markets. Part III, title 6 of the SO Regulation regulates scheduling, and Title V of the EB Regulation sets the requirements for settlement in the balancing markets, including the imbalance settlement.

- (61) When procured in a market-based manner, local SO services may be procured in dedicated local markets for SO services as described in Section 4.2, or through bids in other wholesale markets (DA, ID, BAL) as described in this Section. In any case, the new rules shall provide that the national TC for the overall market design for local SO services (Deliverable 6 in Table 1), if procured in a market-based manner, in each MS are described in a common SO proposal as described in paragraph (23) and submitted to the approval of the NRA.
- (62) The new rules shall provide principles for the coordination of local markets with other wholesale markets (DA, ID, BAL), promoting good coordination between TSOs/DSOs and ensuring coherence in the interaction across different markets and different time frames including the scheduling and imbalance settlement process. The national TC for the overall market design for local SO services in each MS shall describe how such products may be procured, and how local markets shall interact with other wholesale markets (DA, ID, BAL). The national TC for the overall market design for local SO services shall be such that:
- (a) Possibilities for withholding of capacities, gaming and other market abuse are minimised.
 - (b) The design will not result in aggravated needs for local SO services.
 - (c) Liquidity is sufficient in all relevant wholesale markets.
 - (d) It shall be possible to propose bids that are not procured in one market to another market, given they are qualified for that market and that the concerned SP has given its consent if it is not doing the operation itself.
 - (e) The SOs do not unduly distort electricity wholesale markets by procuring local SO services.
- (63) The new rules shall provide that if the SOs are allowed to procure bids from other wholesale markets (DA, ID, BAL) to use for local SO services, the products and pricing mechanism applied for these purchases shall be approved by the NRA as described in Chapter 5. The pricing mechanisms may be different from the general pricing mechanism in the concerned wholesale market, e.g. to take into account the particularity of the purchaser being interested in bids with locational information, contrarily to other buyers in the market. The concerned bids shall contain sufficient locational information to be used for the purpose.
- (64) The new rules shall provide that the national TC for the overall market design for local SO services referred to in paragraph (61) shall specify, among others:
- (a) Roles, responsibilities and interactions of different entities, such as SOs, local markets and the operators of these, and other wholesale markets (DA, ID, BAL);

- (b) Whether and under which conditions bids offered in other wholesale markets (DA, ID, BAL) can be used for local congestion management. In this case, the new rules shall provide the possibility for organising additional local markets, allowing for SOs to procure products others than the ones traded on wholesale markets, unless no such products are part of the national standardised products;
 - (c) Measures to avoid that the same bid is selected twice, in particular where two different markets access the same bids, and the responsibilities for granting that;
 - (d) If necessary, provisions aiming at avoiding too many different market places if this leads to inefficiencies.
- (65) The new rules shall require that when preparing the TC for the overall market design for local SO services, the SOs shall consider a common pool of bids between coordinated or linking local markets with other wholesale markets. Other options for mandatory consideration may be described in the new rules. In the case where these options are not included in the common SO proposal, it shall be justified. The SOs shall take into account the national context when preparing the common SO proposal, such as whether other wholesale markets apply unit or portfolio bidding, whether central or self-dispatch is applied, the maturity and expected volumes of market-based local SO services, the number and structure of DSOs and the nationally standardised products for local SO services. They shall also take into account the potential impact on other wholesale market prices from anticipation of pricing in subsequent, parallel or coordinated, linked or labelled local markets for local SO services. The new rules shall provide guidance on this.
- (66) The new rules shall require interoperability and portability between local and other wholesale markets at least on national level, and more generally define principles for future-proof solutions that allow for evolving towards more sophisticated mechanisms when needed. The interoperability shall aim at cost efficient access to all markets for both SPs and SOs, and for further coordination of markets even if such solutions are not chosen in the national TC for the overall market design for local SO services in their first approved version.

4.2 Operation of local markets for SO services

- (67) Within the national TC for the overall market design for local SO services approved by the NRA (Deliverable 6 in Table 1), as described in the previous Section, an SO can procure local SO services from a local market operated by i) the procuring SO itself, alone or together with other SOs, ii) a different SO or different SOs, or iii) a third party who is not an SO. The new rules shall specify that the market operator of a local market for SO services operates and maintains an IT solution (platform) for this market, communicates with the potential SPs and provides the clearing and settlement of bids. Selection and activation of bids and control of delivered services remain the responsibility of the SO.
- (68) The new rules shall establish principles applicable to all operators of local markets, including:
- (a) The market operator(s) shall be neutral regarding all SPs and technologies and the way their offers are presented to SOs.
 - (b) The market shall be accessible to all market participants, including market participants engaged in aggregation, and all market participants should be treated equally whatever their technology.
 - (c) The market operator(s) shall protect confidential data received from the SPs and SOs.

- (d) The SOs shall share all relevant data as described in paragraph (94) with market participants through all relevant platforms, including platforms that are neither owned nor operated by or operated on behalf of the SO. Data exchange with other platforms shall enable SPs to participate in several markets.
- (69) The new rules shall require the market operators to at least publish the following information: structure, number and clearing of market sessions, gate closure times (where relevant) and products traded.
- (70) The new rules shall provide that the national TC for the overall market design for local SO services shall also define:
- (a) whether a third party may operate local markets;
 - (b) whether a market operator, different from the procuring SO, is allowed to recombine bids in order to suit the needs of an SO. In this case, this shall follow the pricing mechanism defined by the national SOs and approved by the NRA. Moreover, the combining shall follow specifications given by the SO and that are consistent with European and national terms and conditions described in this document. By no means, the market operator shall perform any arbitrage in the bid selection, thus the specifications given by the SO shall be detailed enough for the market operator to simply apply them;
 - (c) whether a market operator is allowed to forward bids to other wholesale markets, recombined or not, subject to the SPs' consent and when the concerned product is compatible with the concerned wholesale market. Nevertheless, the new rules shall provide appropriate requirements for neutrality and transparency, in particular as concerns the pricing mechanism and the choice of bids to be forwarded.
- (71) The new rules shall provide that any third party market operator of local markets for local SO services must be independent from all market activities, i.e. supply and demand in electricity markets, with the potential exception of the regrouping of bids mentioned above. The new rules shall establish a process enabling the SOs to ensure the independency of a third party market operator. They shall require SOs to ensure this before procuring local SO services from a third party market operator. The new rules shall provide common principles for a governance model for third party operators of local markets to be further developed in the national TC for the overall market design for local SO services where such operators are allowed. These common principles shall ensure that such market operators cannot use a de facto monopoly position to extract excessive benefits or other advantages.

4.3 SOs coordination

- (72) The new rules shall provide principles for the requesting SO to establish the SO coordination area as a group of grid elements/users/connection points that may (i) be affected by, (ii) provide solutions to or (iii) need to provide information to forecast, detect or solve, a given congestion or voltage control issue or group of such. The SO coordination area shall include all connection points and assets from which the SO may need data in order to forecast and solve the congestion or voltage control issue, and where delivered local SO services may contribute to solving the issue. One SO coordination area may cover parts of the grids of several SOs, and overlap with other SO coordination areas linked to different issues if the merging of areas is not relevant for solving the issue. The SO coordination area and affected SO shall be such that the affected SO(s) to be equal to the SO(s) having parts of their grids within the SO coordination area. The understanding of a SO coordination area may be aligned with the one of "observability area" as used in the SO Regulation. When this area may include parts of the grid of other SOs, the requesting SO shall include the potentially affected SOs in the assessment. The new rules shall establish that the SO coordination

areas shall be assessed regularly by the SOs, and at least when preparing the network development plan every second year as described in Article 32(3) of the Electricity Directive. This shall ensure a dynamic use of SO coordination areas, not on a day-to-day basis but with the aim of establishing coordination when this is necessary for the management of probable and/or recurrent congestion or voltage control issues in an optimal way. The new rules shall provide principles for detecting situations where such areas and corresponding SO coordination are required.

- (73) The new rules shall establish principles for establishing and selecting different levels of coordination within a SO coordination group, according to the degree to which the different SOs are affected and to the need for coordination. The right level of coordination is selected by the requesting SO, in respect of the principles of the new rules and the national TC for SO coordination (Deliverable 7 in Table 1). The highest coordination level shall include at least the following topics:
- (a) Data exchange as described in this Section and in paragraph (26);
 - (b) Grid operation and forecast for grid operation;
 - (c) Solutions for solving the congestion or voltage control issue, including grid-technical measures and procurement and activation of local SO services;
 - (d) Network development planning as described in Article 32(3) of the Electricity Directive and in Section 5.4.

The new rules shall provide principles for the coordination of these activities.

- (74) The new rules shall establish principles for forecasting congestion and voltage control issues, determine size and location of physical congestions and voltage control issue, with a granularity as close as possible to the imbalance settlement period in order to accurately reflect real-time system conditions. The new rules shall further establish principles for selecting the most efficient solutions for solving these congestions and voltage control issues. The principles shall ensure non-discrimination, technology neutrality and protection of confidential data from SPs and SOs. The principles shall include that the data received by the requesting SO from other SOs and SPs shall be used for grid management and operation and for no other purpose. Furthermore, the new rules shall encourage implementation of digital tools for forecasting, detecting and solving congestion and voltage control issues by selecting optimal solutions.
- (75) The new rules shall establish that each SO is responsible for solving congestion and voltage control issues on its own grid. Therefore, the costs for local SO services are allocated to this SO, independently of the grid to which the activated resources are connected. The new rules shall not intervene with inter-TSO cost sharing methodologies.
- (76) The new rules shall ensure that, if the activation of local SO services by an SO creates an open position, i) the open position is closed within reasonable time, ii) the most efficient solution for closing the position is chosen and iii) the cost for closing the position is allocated to the SO whose grid is congested or has a voltage control issue, independently of the localisation of the resources that are used. The new rules shall clarify the process for using bids from the balancing energy markets to close an open position due to congestion management by an SO, including in which cases these bids should be considered as “activated for internal congestion management” as described in Article 30(1)(b) of the EB Regulation.
- (77) The new rules shall also provide that:

- (a) SOs can procure and activate SO services from resources located on each other's grids when these are useful for more efficient operation of and/or investment (investment deferral) in its own grid or, as concerns the TSO, for balancing. To this end, they shall also share information on contracted capacities with each other.
- (b) The connecting or intermediate SO may flag a bid, contract, SP or connection point as unavailable if the activation endangers operational security. The new rules shall define principles for when an SO may flag unavailability and for the process to apply in that case. This process shall ensure the following:
 - 1) transparency, while protecting confidential information about the concerned SP;
 - 2) that the connecting or intermediate SO informs the requesting SO as soon as it is aware that the resource should not be activated. If necessary and applicable, the market for SO services where the resource is offered shall also be informed so that the resource is not proposed here;
 - 3) that the SO that flags unavailability explains the reason for the unavailability of the resource to the relevant SOs and such events are reported regularly to its NRA.

The new rules should provide guidance on how the concerned SP shall be compensated in the case where it would have been activated by the requesting SO available, including measures for mitigating the risk of potential gaming. The new rules shall also clearly establish the difference between such availability and prequalification as described in Section 3.

- (78) The new rules shall provide principles to ensure data exchange between SOs when performing the tasks and the coordination described above. This data exchange shall ensure coordinated access to available resources, an optimal selection and activation of available resources and a coordinated service management. The new rules shall ensure that the data requirements meet the principles set in paragraph (26) and fill the potential gaps in the SO Regulation and the KORRR, including data that an SO shall receive:
 - (a) from SOs, data similar to those described in Articles 43(3) and 44 of the SO Regulation, for assets within the SO coordination area, and
 - (b) from the grid users within the SO coordination area, data similar to those described in Articles 48 to 50 and 53 of the SO Regulation, whose data is needed to forecast and solve the congestion or voltage control issue.

The new rules shall provide principles for identifying the exact data to be provided, and for identifying which grid users shall provide data, in a clear, transparent and non-discriminatory manner. For point (b), the new rules shall ensure that when and where applicable, data for such units are forecasted by the SO rather than provided by the unit itself.

- (79) The principles described in paragraph (72) to (78) shall be further developed in national TC for SO coordination in each MS (Deliverable 7 in Table 1), ensuring that balancing, congestion and voltage control issues are dealt with in a consistent manner throughout each MS, independently of whether the issue affects other SOs than the requesting SO or not, and ensuring that the coordination processes in new SO coordination groups is not hampered by different approaches. The national TC shall be aligned with existing requirements for solving physical congestion, balancing and voltage control issues, in particular the regional (CCR) ROSC methodologies and the EU-wide methodology for coordinating operation security analysis. In particular, the national TC shall ensure that the TSO's balancing actions or other SO remedial actions (e.g. for congestion management and/or voltage control but also including RCC-initiated actions) do not aggravate congestion or voltage control issues on other grids, regenerate problems that have been solved by

actions taken by other SOs or endanger system security. The national TC for SO coordination shall ensure optimal use of resources.

- (80) The national TC for SO coordination shall be submitted to the NRA for approval based on a common SO proposal as described in paragraph (23).

5 Congestion management

- (81) In the following, requirements for new rules for market-based congestion management are described. These shall also apply to market-based procurement of active power for voltage control, as specified in paragraph (99).

5.1 Products

- (82) The new rules shall provide requirements to SOs for the definition of products for congestion management purposes and shall define a common European list of attributes for products used for congestion management that shall be used by SOs when describing the products to be procured. The new rules shall provide that upon request, the NRA may provide an exemption in order to allow SOs to use additional attributes for a limited period of time to be defined in the new rules.
- (83) The new rules shall provide that SOs define standardised products for congestion management at national level. The new rules shall ensure that different products correspond with the specific needs of SOs, which depend on network topology, the number of SPs in the area, and the size and predictability of congestion, among other things. The new rules shall ensure that when defining the products, the SOs take both current and future system needs, as described in the NDP, into account, as well as current and future SPs' ability to provide the products. If the SOs procure products from other wholesale markets (DA, ID, BAL) as described in paragraph (64), these products shall be included in the list.
- (84) The new rules shall provide that the list of standardised products shall be described in national TC for local SPs (see paragraph (22)) in a common SO proposal as described in paragraph (23).
- (85) The new rules shall aim to ensure that the different products are defined in a consistent manner. As such, the congestion management product available to the SO can be prequalified, selected and activated when and where it is most valuable, i.e. in a way that optimises total welfare, facilitates market access and lowers entry and administrative barriers.
- (86) The new rules shall allow for different products, that may consist of active power injections to or withdrawal from the grid, options for the SO requesting the active power injections to or withdrawal from the grid (capacity and activation) or similar products, including both redispatch products and dispatch limitation products. The new rules shall prescribe the conditions under which capacity that is contracted long term by a SO, e.g. in the form of a tender for the procurement of congestion management products as an alternative to grid investment, may also be used for other purposes. Product definition shall facilitate the effective use of congestion management for various SO needs. The new rules shall provide that the definition of products shall ensure non-discrimination and technology neutrality.

5.2 Procurement and pricing

- (87) The new rules shall provide that when facing congestion, the SO shall always choose the most economically efficient option or combination of options of the different tools at its hands, such as congestion management, grid investments, non-firm connection agreements or bidding zone review, optimising the resulting social welfare. The new rules shall specify principles for the use of congestion management products as described in paragraph (86)

on the one hand, and non-firm connection agreements on the other, ensuring that markets are not unduly distorted.

- (88) The new rules shall include principles for procurement and pricing applicable to different products, different time horizons and specific national and/or local features. The procurement and activation shall be market-based, through a process that ensures transparency and the selection of the most cost-efficient resource. Market-based processes may be different for long/short term procurement and activation, depending on the products and the timeframe.
- (89) The new rules shall set the principles for the regulatory assessment described in Article 32(1) of the Electricity Directive, including at least the frequency and the method. The principles shall include a description of how and when the assessment should be made locally or nationally, taking into account that conclusions may differ for different parts of the grid within a MS, for different products (especially distinguishing short term and long term products), and investigate potential mitigating measures. Without prejudice to the general provisions of Article 32 of the Electricity Directive on the derogation to market-based procurement of congestion management services, the new rules shall further clarify when paragraph 3 of Article 13 of the Electricity Regulation applies, allowing for non-market-based redispatching.
- (90) The new rules shall empower SOs to propose pricing mechanisms for market-based procurement of congestion management that ensure fair and competitive procurement and activations and long-term market development. The new rules should allow that prices for the activation of resources could be predetermined in capacity contracted in advance. In such cases, the use of a secondary activation market, allowing for other participants to be selected, should be considered. The pricing mechanisms shall ensure equal treatment to all SPs and technology neutrality.
- (91) The new rules shall provide that the pricing mechanisms are described in national TC for local SPs (see paragraph (22)) in a common SO proposal as described in paragraph (23). If the SOs procure congestion management products in the wholesale markets (DA, ID, BAL), the pricing mechanisms applied to these products when procured for congestion management shall also be described in the national TC for local SPs.
- (92) The new rules shall provide additional requirements for neutrality and transparency for the procurement of congestion management products by SOs that are not unbundled according to Article 35 of the Electricity Directive.

5.3 Transparency and information to potential providers

- (93) The new rules shall include the following neutrality requirements for the procuring SO:
 - (a) The procuring SO shall be required to act in a non-discriminatory manner when procuring and using congestion management products, in particular if the SO is vertically integrated with a SP.
 - (b) No exchange of privileged information about congestions shall be transferred between SOs and affiliated/parent companies.
 - (c) The relation between the procuring SO and SPs shall be transparent.
- (94) The new rules shall provide that SOs shall make sure that, at least, for the market-based procurement and activation of congestion management products, the following information is published:

- (a) the TC for local SPs (see paragraph (22)) standardised products for congestion management and pricing mechanisms;
- (b) the information related to the requirements for becoming a SP in the respective product including prequalification requirements;
- (c) the necessary data to ensure an economically-efficient functioning of congestion management markets and to provide the same level of information to all interested market parties; this includes information on the area of delivery (network points), forecasts about the expected number of events, timing of events and the resulting need for congestion management, selection criteria, reserve price (if applicable); whenever possible the timing for publication shall be early enough in order to ensure that interested market parties can take them into account;
- (d) market results and activations including information on volumes, prices, bids – if necessary in an aggregated and anonymous format – and bid selection criteria applied while respecting commercial secrets and taking into account potentially market distorting information; timing for publication shall be early enough in order to ensure that interested market parties can take them into account.

The new rules shall provide guidance on the publication of reserve prices, taking into account effects on liquidity, participation, market power, gaming and potential mitigating measures (e.g. publishing a price range rather than a fixed reserve price). Information about procurement and activation shall be provided in English, at least, and shall be made available in an efficient manner. The data should be made publicly available in easy to implement and accessible formats. The NRA can require DSOs to publish the information on a single platform on national level.

5.4 Network development plans

- (95) The new rules shall establish principles for the DSO's NDP described in Article 32 of the Electricity Directive, including:
- (a) General principles on the planning methodology, allowing for taking into account particular characteristics at national and DSO level.
 - (b) Guidance on how to take into account demand response and other relevant resources and assess future needs for local SO services, in particular as an alternative for grid reinforcement.
 - (c) On national level, the DSOs shall apply planning methodologies that are consistent between them and with the planning methodology of the national TSOs for the TYNDP where relevant.
 - (d) Scenario data and/or assumptions shall be sufficiently consistent among all DSOs on national level, taking into account the scenarios used by the national TSO in its planning.
 - (e) Cooperation between TSOs and DSOs on MS level to enable the abovementioned requirements.

The new rules shall also establish principles for TSO to take into account information from the DSOs of its MS and from the NDPs of these DSOs in its own planning.

- (96) The new rules shall require sufficient transparency on the NDP, including methodology and scenarios and/or assumptions to identify network development projects making sure that the provided description is comprehensible for stakeholders. For projects based on local SO services, all available information about the predicted need for such services that may be of use for current and future SPs shall be provided, including when (peak/off-peak, summer/winter, day of the week, time of the day), where and which volumes (split in

upwards/downwards demand) are assumed to be needed. The new rules shall establish that the DSOs publish the information on a central publication and communication platform at national level if required by the NRA.

- (97) The new rules shall require that the DSOs, after the public consultation required in Article 32(4) of the Electricity Directive, justify and make publicly available how comments and remarks coming from the public consultation have affected NDPs, and if some responses have not led to changes, the reasoning that led to this choice.

5.5 Harmonisation process

- (98) The new rules shall define a European-wide process, as described in paragraph (24), including specific time limits, for investigating the need for further harmonisation of congestion management. The monitoring report (Deliverable 8 in Table 1) and the proposal for the EU methodology (Deliverable 9 in Table 1), which are envisaged in the process described in paragraph (24), for the area of congestion management shall assess at least the following features of congestion management:

- (a) Products, including, but not limited to, the common list of attributes;
- (b) Procurement methods, including, but not limited to, coordination of local and other wholesale markets and market platforms or other stakeholder interfaces for procurement as described in Sections 4.1 and 4.2 and in national TC for overall market design for local SO services;
- (c) Stakeholder information and transparency on procurement and activation processes and results, future needs of congestion (plans, localisation of the needs for SO services or grid reinforcement);
- (d) SO coordination as described in Section 4.3 and in national TC for SO coordination.

6 Voltage control

- (99) The new rules shall provide guidance on the market-based procurement of voltage control services. Other non-frequency ancillary services shall be dealt with at national level. Voltage services may include both active and reactive power. In the following, only reactive power services are concerned. As concerns active power, the new rules shall provide that the procurement of active power for voltage control shall follow the same rules as for congestion management.

6.1 Products

- (100) The new rules shall provide requirements for the definitions of products for voltage control. The products that are to be procured shall be defined by the SO(s) that needs the product, taking into account the technical specificities of the grid and the problem to be solved, but also the specificities of potential providers in order to use the available resources in the best possible way. The new rules shall provide a process for establishing standardised products at national level in the TC for local SPs (Deliverable 1 in Table 1).

- (101) The new rules shall define a common European list of attributes for products used for voltage control that shall be used by SOs when describing the products to be procured. This list shall in no way limit the type of products that may be described by a SO, but strive towards harmonised description when possible.

- (102) The new rules shall provide that the products for voltage control shall be asymmetric when possible.

6.2 Procurement

- (103) The new rules shall set up common high level principles for the market-based procurement of voltage control products. These principles shall include, at least, transparency, technology neutrality and non-discrimination. They shall list information required from the SO to market participants before and after procurement and activation, such as technical requirements for participation in the market, selection criteria, etc.

- (104) The new rules shall provide that market-based procurement is to be preferred, but may be completed by rules based procurement, in particular, for short term products when and where market-based procurement is economically not efficient. The rules based procurement may include compensation or not. In this case, the new rules shall provide guidance to avoid market distortion due to interaction between market-based and non-market-based procurement. The new rules shall provide that, in particular, market-based procurement of long term voltage control services shall be considered when the mandatory capabilities as defined in RfG Regulation and DCC Regulation are not sufficient for the provision of voltage control to satisfy the needs of the SO. In this case, the activation of the procured resources shall follow the same rule as the activation of mandatory capabilities, i.e. rules based activation with a similar compensation scheme as for mandatory resources.

6.3 NRA assessment

- (105) The new rules shall set the principles for the regulatory assessment described in Article 32(1) of the Electricity Directive, including at least the frequency and the method (including how and when the assessment should be made locally or nationally, taking into account that conclusions may differ for different parts of the grid within a MS), that could be a market test

or a cost benefit analysis. Derogation to market-based procurement may be granted by the relevant NRA, whenever it is demonstrated that the market-based approach is not economically efficient or that such procurement would lead to severe market distortions or to higher congestion.

6.4 Reporting

(106) The new rules shall require the ENTSO-E and the EU DSO entity to publish a monitoring report (Deliverable 10 in Table 1) on the implementation of procurement of voltage control services, including:

- (a) Information on where market-based procurement has been applied or where derogations have been applied for or granted;
- (b) Volumes and types of voltage control services procured; and
- (c) Method of procurement used for different types of products.

The report shall provide a comparison of the applied methods and a reasoned view on points where further European harmonisation is expected to enhance the overall welfare, and in particular contribute to the aims of the Electricity Regulation, the general aims of Network codes as described in Article 58(2) of the Electricity Regulation and the aim of the current FG as described in Section 1.1. The process shall include a public consultation on this report, its submission to ACER for approval

Annex I

Table 1. List of deliverables

| SECTION | Nº DELIVERABLE | DELIVERABLE |
|---|-----------------------|---|
| 2.1, 2.3, 3.1, 3.2, 3.3, 3.4, 5.1, 5.2, 6.1 | 1 | National TC for SPs |
| 2.2 | 2 | European monitoring report – analysis of options for further harmonisation on aggregation models |
| 2.2 | 3 | European methodology – further harmonisation of the main elements of aggregation |
| 3.2 | 4 | European monitoring report – analysis of good practices in ex-post verification processes and ex-ante prequalification processes |
| 3.2 | 5 | European methodology – further harmonisation of the ex-post verification processes and ex-ante prequalification processes |
| 4.1, 4.2, 5.5 | 6 | National TC for the overall market design for local SO services |
| 4.3, 5.5 | 7 | National TC for SO coordination |
| 5.5 | 8 | European monitoring report – analysis of options for market-based congestion management including products, updated list of European attributes, procurement methods, overall market design and SO coordination |
| 5.5 | 9 | European methodology – further harmonisation of market-based congestion management including products, updated list of European attributes, procurement methods, overall market design and SO coordination) |
| 6.4 | 10 | European monitoring report – analysis of options for market-based voltage control |