European Commission

INCEPTION IMPACT ASSESSMENT			
TITLE OF THE INITIATIVE	Network code on electricity balancing		
LEAD DG – RESPONSIBLE UNIT – AP NUMBER	DG ENER: B-2 **AP 2013/ENER/050**	**DATE OF ROADMAP**	19/07/2016
LIKELY TYPE OF INITIATIVE	Commission Regulation		
INDICATIVE PLANNING	*Target date for comitology vote – Q4/2016*		
ADDITIONAL INFORMATION	http://ec.europa.eu/energy/en/topics/wholesale-market/electricity-network-codes *http://networkcodes.entsoe.eu/market-codes/electricity-balancing/* *http://www.acer.europa.eu/electricity/fg_and_network_codes/pages/balancing.aspx*		

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A. Context, Subsidiarity Check and Objectives

Context

- Integrated electricity balancing market is an important building block in the creation of the European electricity market. To date, the progress in integrating national balancing markets has been limited, mainly due to significant differences in existing national balancing markets. While most of these arrangements can be harmonised to a certain degree, some differences appear to be inherent to differences in balancing resources being available in Member States.
- The 15th Florence Forum, held in November 2008, invited the European Regulators Group for Electricity and Gas to develop a target model for balancing. In January 2012, the European Commission requested to ACER the Framework Guidelines on electricity balancing which were adopted in September 2012. In December 2013, ENTSO-E delivered the Network Code on electricity balancing to ACER which provided its first reasoned opinion in March 2014. In September 2014, ENTSO-E submitted a new version of the Network Code on which ACER issued a positive recommendation on 20 July 2015.
- The legal basis for the electricity Network Codes and Guidelines was created in the Third Energy Package, specifically in Articles 6, 7 and 18 of Regulation (EC) No 714/2009 on conditions for access to the network for cross-border exchanges in electricity ('Electricity Regulation'). The Third Energy Package has created an institutional set up for developing Network Codes with a view to harmonising, where necessary, the technical, operational and market rules governing the electricity and gas grids. In this institutional setup there is a key role for the Agency for the Cooperation of Energy Regulators ("ACER"),[1] for the European Network of Transmission System Operators ("ENTSOs")[2] and for the European Commission[3] to work in close cooperation with all relevant stakeholders on the development of Network Codes. Network Codes and Guidelines will apply in the same way as an EU Regulation.
- Supervisory roles for NRAs and ENTSO-E and core indicators of progress will be set out in the Network Codes. Article 37 of the Electricity Directive foresees very broad monitoring rights and duties for NRAs. Article 9(1) of the Electricity Regulation tasks ACER with the monitoring of all the Network Codes, to be assisted by ENTSO-E where needed on the basis of Article 8(9). Individual TSOs are obliged to cooperate with ENTSO-E according to Article 4. Additionally, stakeholder involvement will be envisaged.
- Meanwhile the Communication (COM(2015) 80 final) launching a public consultation on an energy market design of 15 July 2015 concentrates on strengthening the cooperation in the field of electricity transmission systems, including possibilities to move from national balancing zones, within which reserve requirements are calculated and procurement made, to larger, more regionally-based zones.
- Stakeholders mostly agree about the importance to improve conditions in the balancing markets. Different stakeholders may be sensitive to the regional dimensioning and procurement of balancing reserves.

1 http://www.acer.europa.eu/Pages/ACER.aspx
2 For electricity: http://networkcodes.entsoe.eu/; for gas: http://www.entsog.eu/
3 http://ec.europa.eu/energy/en/topics/wholesale-market/electricity-network-codes

Issues

- The European energy sector is currently facing a series of significant challenges. The European energy and climate policy goals require major changes relative to the way in which power systems have been developed and operated historically. The connection of significant volumes of variable renewable energy sources, whose output is often difficult to predict with certainty, provides particular challenges for system operators who are tasked with ensuring the security of the system in real time.
- Achieving this requires the development of well-functioning and liquid markets across a range of timescales. Market participants need to be able to trade via forward markets and at the day-ahead stage. They also need to be able to fine-tune their positions within day (for example, when wind forecasts or market positions change). These markets will be supported by the development of effective cross-border balancing markets which allows TSOs to manage the electricity system effectively, securely and at reduced cost.
- The Network Code aim at addressing two main problems:

  1) The inefficient use of the European electricity grid. Until today, efficient rules that allow an efficient use of the EU electricity transmission network and seamless EU-wide trading of electricity have been missing. For example, obstacles to trading short-term before delivery exist which prevent market participants and TSOs from fully exploiting the benefits from cross-border electricity trade. In addition, the non-existence of a common imbalance settlement period due to historical or technical reasons leads to inefficient cross-border dispatch, a different definition of balancing needs or a different approach to TSOs procuring those balancing needs. Also, the lack of a common methodology to price and activate balancing energy leads to a situation where balancing prices not always reflect the real time situation of the grid.

  2) While TSOs operate an interconnected EU electricity network, there are currently no coherent EU-wide rules for balancing. The absence of coordinated balancing market rules is likely to lead to significant security of supply risks in the future, notably because of:

  - the connection of large amounts of electricity production from renewable electricity sources, leading to more complex grid operation due to the intermittent and non-predictable character of production from renewable energy sources;
  - unbundling rules (separation between network operation and demand/supply business) lead to an increased need for cooperation and coordination between the various operators (TSOs, DSO, generators);
  - increasing cross-border electricity flows/interconnection between Member States (as a consequence of the creation of the internal market for electricity).

Subsidiarity check

- Common rules are developed to achieve a minimum level of binding rules to create the European electricity wholesale market through efficient cross-border trade and to create rules for electricity transmission system development and operation. Individual action by Member States would not be sufficient and efficient. EU can achieve the objectives better. Moreover, the initiative would set only the minimum degree of harmonisation necessary to achieve the intended objectives, whilst taking account of specific national and regional characteristics.

Main policy objectives

- The objective of the network code will be to define models for cross-border exchanges of balancing energy that will first emerge in different geographical areas and gradually, i.e. within 6 years after the entry into force of the Network Code, be integrated into one European platform where all TSOs would have access to different types of balancing energy products while taking into account the transmission capacities available between different areas.
- Effective balancing markets are essential if prices are to reflect scarcity and reward flexibility. The 'imbalance price' – i.e. the price which a supplier or producer must pay because they have over- or under-contracted – will be the building block for prices in the intraday, day-ahead and forward markets. Effective balancing prices will also encourage suppliers to balance their positions, which will reduce the imbalances left for the TSO to manage and hence the overall cost.
- Network Codes and Guidelines are an important element of the implementation process of the Third Energy Package. As such, Network Codes and Guidelines are expected to:
  - further develop the internal market for electricity. This is achieved by avoiding unnecessary barriers to electricity trade resulting from fragmented and inefficient rules;
  - introduce a clear and legally binding framework for the cooperation between transmission system operators (TSOs) and national regulatory authorities;
  - provide for harmonised cross-border capacity allocation and balancing rules in the EU;

- maintain and increase security of electricity supply in the integrated EU electricity grid.

B. Option Mapping

Baseline scenario – no EU policy change

- The **Baseline Scenario** consists of a voluntary approach to evolve without a binding European regulation in place. In this way, the existing on-going experiences will be free to develop further and integrate, if so decided by the participating parties. However, isolated (and possibly incompatible) projects may be implemented across Europe. Some countries may decide not to share their internal resources or take part in the integration of balancing markets. This would result in a situation where expensive resources are often activated in some countries, while in other countries cheap resources are being kept locally for security reasons.

Options of improving implementation and enforcement of existing legislation or doing less/simplifying existing legislation

- Three additional options will be examined regarding the level of market integration and harmonisation requested in the Network Code:
  (a) **First option** will consist in developing a binding regulation on cross-border exchanges of some balancing resources. A limited set of "cross-border balancing energy products" would be identified and each participating TSO would be required to share these products with other TSOs. Such exchanges would likely involve surpluses that are not needed locally to meet the security criteria and/or balancing expectations, to be exchanged after the gate closure time of the cross-border intraday market and based on the availability of sufficient transmission capacity. TSOs would identify available surpluses of balancing energy in their local balancing market and offer them directly to other TSOs which would then have the possibilities to activate balancing energy locally or cross-border.
  (b) **Second option** will involve the setup of a European binding framework in which the harmonisation of key national elements is addressed with the aim to facilitate the development of pan-European "standard balancing energy products" that would be used locally and cross-border by all TSOs. They would firstly get involved in regional projects making sure they continuously have access to the adequate amount of reserves, while standard balancing energy products would be developed and progressively shared between all TSOs on a European-wide platform. In order to minimise the cost of balancing energy, all the bids and offers that are available in each control area would be gathered in a common list and the activation would be done according to a merit order list subject to operational security limits and available transmission capacities after the cross-border intraday market. This option implies a higher level of coordination between European TSOs, as it assumes an extensive standardisation of balancing energy products and some coordination of operational processes. However, such coordination still relies on the concept of local responsibilities of individual control blocks and remains compatible with current operational security principles.
  (c) **Third option** would result in a significant evolution of the current design in which European electricity systems are operated. A supranational approach would be responsible for real-time balancing and would activate balancing energy in the most efficient way. This would have a major impact on the current design of system operation procedures and responsibilities.

Alternative policy approaches

- As the initiative is targeted on the Network Code electricity balancing, alternative policy approaches, outside of the limits set above, are not deemed relevant.

Alternative policy instruments

- The options described above will consist of regulatory instruments complemented, where appropriate, with non-regulatory instruments.

Alternative/differentiated scope

- The options described above will not examine the regional procurement of balancing reserves (i.e. services needed at short notice from generators or the demand-side in order to keep the system in balance in real-time).
- The market design initiative will assess the possibilities to enlarge the scope of functions of Regional Security Coordinators, including dimensioning and procurement of balancing capacity at regional level. This would lead in an optimal redesign of control blocks and current operational security principles, potentially moving local responsibilities for the dimensioning and pre-qualification of balancing reserves to a limited number of Regional Security Coordinators. TSOs would still be responsible for real-time activation; however they would only have access to a regional platform for the procurement of balancing reserves, which would foresee daily auctions separating upward and downward bids.

Options that take account of new technological developments

- The options described above will take account of new technological developments, particularly ones related

to the participation of demand response and renewable energy sources in the balancing market.

Preliminary proportionality check

- An EU legislative framework for the electricity balancing market is a proportionate response to the objective to achieve a fully-integrated internal energy market, enabling for the most cost-efficient operation of the electricity system and investments decisions in infrastructure across the EU.
- The functioning of balancing markets could be improved along two dimensions: (i) by enhancing and harmonising national market designs; and (ii) by integrating balancing markets across Europe. As an alternative, one could envisage that a stronger harmonisation is pursued in the first place, which aims to facilitate stronger integration of balancing markets and to create a level-playing field for the wholesale markets (long-term, day-ahead and intraday). As another alternative, one could also envisage to focus directly on the integration of balancing markets and expecting that necessary harmonisation will come along in the implementation phase.
- Nonetheless, the Network Code does not go beyond what is necessary to achieve these objectives. Important national prerogatives, such as the Member State's right to establish national network codes that do not affect cross-border trade, their right to determine the conditions for exploiting their energy resources, their choice between different energy sources and the general structure of their energy supply, remain untouched.
- However, it is important to note that the existence of fragmented and non-harmonised national balancing market arrangements could result in distortions that may create substantial implementation challenges for wider integration of balancing markets. Therefore, there is a need to ensure consistency between requirements in terms of harmonisation and requirements in terms of integration of balancing markets.

C. Data Collection and Better Regulation Instruments

Data collection

- A study will be carried out by a consultant to support the Commission in the impact assessment. Specifically the study will help the Commission's efforts to define a target model for the exchange of balancing energy in Europe by quantifying the costs and benefits of the different options for each of 28 Member States compare to the baseline scenario and relative to each other. The benefits will mainly focus on the savings for each of 28 Member States related to cheaper or less balancing energy activation costs.
- ENTSO-E is currently performing two additional studies as early implementation of the Network Code: one study with Frontier Economics on the costs and benefits to move to 15 minutes imbalance settlement period in Europe and a second study with E-Bridge to standardise Frequency Restoration Reserves in Europe. Results will be discussed in an ad-hoc ACER-ENTSO-E Balancing Stakeholder Group and outcome should help for comitology process.
- Impacts are thus evaluated based on the work of ACER and ENTSO-E and partly on own studies by consultants.

Consultation approach

- The elaboration of these rules according to the Third Energy Package provisions requires extensive consultation of all concerned parties. These consultations are done mainly by ACER and ENTSO-E but also by the Commission, depending on the item. The updated planning of consultations, which can be subject to modification is accessible here; http://ec.europa.eu/energy/en/topics/wholesale-market/electricity-network-codes

Will an Implementation plan be established?

■ **Yes** ☐ **No**

D. Information on the Impact Assessment Process

The work on the impact assessment has started:

- The initiative is guided by the already existing Inter-service group on Network Codes comprising: the Legal Service, the Secretariat-general, DG Climate action, DG Communications Networks, Content and Technology, DG Competition, DG Economic and Financial Affairs, DG Employment, Social affairs and Inclusion, DG Energy, DG Environment, DG Financial stability, Financial services and Capital markets, DG Internal market, Industry, Entrepreneurship and SMEs, DG Mobility and Transport, DG Research and innovation. First meeting took place on 24 September 2015 and second meeting took place on 20 January 2016.
- As the impact assessment for market design initiative is being developed in parallel with the impact assessment on the Network Code electricity balancing and that both impact assessments could be

complementary, especially concerning the possibilities to enlarge the scope of functions of Regional Security Coordinators to the dimensioning and procurement of balancing capacity, the target date for submitting the report to the impact assessment board should be similar (summer 2016) with potential discussion and vote in the Electricity Cross-Border Committee by end of 2016. The adoption of the Network Code on electricity balancing is not foreseen before summer 2017.

E. Preliminary Assessment of Expected Impacts

Likely economic impacts

Each option should be assessed in a cost-efficient manner (i.e. including all costs/benefits and monetizing non-economic indicators) and clearly provide indicators on the evolution of balancing costs for TSOs.

Each option will be assessed on the costs related to the development of models for cross-border exchange of balancing energy (i.e. algorithms) and on the benefits due to reduced balancing energy activation costs and savings related to potential pooling of balancing reserves. Each option must include the potential improvement of cross-border trades closer to real time.

Likely social impacts

A more competitive balancing market will put downward pressure on TSOs costs. The various options are expected to lead to a higher degree of security of supply, for all in a spirit of solidarity and at a lesser cost. Note that we do not expect major social impacts in this initiative.

Likely environmental impacts

A more efficient use of cross-border capacities and potential pooling of balancing reserves will help achieving European energy and climate policy goals by GHG emission reduction thanks to participation of demand response and renewable energy sources in the balancing market.

Likely impacts on simplification and/or administrative burden

The Network Code on electricity balancing will aim to improve coordination among TSOs, by creating more transparent and harmonized balancing rules. This is expected to reduce and simplify the participation in the balancing market.

Likely impacts on SMEs

The Network Code on electricity balancing will facilitate the participation of decentralized generation and demand response via aggregators. It is expected to boost the future competitiveness of EU technology providers such as the electrical and electronic engineering industry, which consists mostly of SMEs.

Likely impacts on competitiveness and innovation

The Network Code on electricity balancing will facilitate the participation of demand response and renewable energy resources; thus unlocking additional revenue streams for new actors in the balancing market.

Likely impacts on public administrations

The introduction of better governance principles in the electricity sector and harmonized rules across Member States' electricity markets and system operation is expected to facilitate decision making both on a national, regional, and European level. If any additional costs, it is expected to be minimal compared to the potential benefits.

Likely impacts on third countries, international trade or investment

Considering the limited electricity trade with third countries, no significant impact is expected on third countries and international trade or investment.