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**E.ON Response to the Consultation on
Draft Framework Guidelines on System Operation**

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General comments

We believe it is essential to have Framework Guidelines (FGs) and related Network Codes (NCs) closely coordinated with other FGs and NCs in their interfaces. This is especially relevant for FG System Operation and we see the need to coordinate with the NC to be established under the FG Grid Connection for technical requirements, the NC Capacity Calculation under the FG CACM with regard to generation and consumption data to be provided to TSOs and the FG Balancing with regard to which system reserves are tackled by which FG (Primary, Secondary, Tertiary, black start etc.).

Further it needs to be ensured that the NCs are not formulated too detailed in order to keep the capability for adoptions without complications resulting from the NC's status as European law.

Consultation Questionnaire

General Issues

- 1. The Initial Impact Assessment (IIA) identifies the following challenges (i) growing amount of distributed generation and variable generation (ii) increasing interdependence of control areas. Are there additional key cross-border challenges that the Framework Guidelines (FGs) and Network Code(s) on System Operation should address?**

We agree with the key challenges mentioned above. In addition, we believe that facilitation of the market and European-wide integration should be explicitly mentioned as a central objective for system operation to reflect the crucial role of system operation with its

technical rules for appropriate market design. TSOs have the task to facilitate a single European power market and the guidelines should better reflect the objectives of the legislation under which they will be adopted: i.e. the Third Package. This means that a well functioning market should be the main driver for system operation network codes.

We agree that that growing amounts of intermittent generation (not correlated with demand) is a challenge. Yet we think that this cannot be handled only through system operation procedures as this will be expensive and counter-productive. Primary these challenges should be tackled by market participants linking generation and demand in a much more intelligent way.

Another challenge we see is the facilitation of a European single market which may require TSOs to operate the system close to its technical and within its security limits. As system operation will affect market functioning, transparency in system operation is essential and TSOs in its system operations activities need to have a correct view of the market.

Stated this, we do not see additional key cross border challenges to be covered. With regard to the challenges mentioned above it is to be stated that only a part of the challenges have cross border relevance and require European wide harmonization.

2. The Framework Guidelines identify a number of actions and requirements to be included in the Network Code(s) as a solution to these challenges. Are the actions and requirements identified in the Framework Guidelines appropriate to solve these challenges?

Overall we agree with the actions and requirements as defined in the FG. However there are several issues where the FG should give more clear guidance for the development of the NCs:

Market facilitation and integration

The tasks of TSOs as facilitators of a single European power market have been further enforced with the Third Package and are a core element of Reg. 714/2009. This means that in addition to system security a well functioning market should be the main driver for the development of system operation network codes.

In this respect objectives should be revised respectively enlarged by:

"To deliver benefits to customers by supporting the functioning of the competitive market for electricity, especially in relation to the development of liquid and competitive day-ahead, intraday and balancing markets."

This underlines the need for a further degree of harmonization in terms of similar market design principles being used across the EU, including the functioning of system operation and its interaction with balancing and traded markets.

Information exchange

One of our main concerns regarding the described proposals ranging through the entire draft FG is "information exchange": this is related to very probable significant additional requirements on the DSO business from handling data exchange with TSOs on decentralized production and demand in the requested "real-time"-framework due to the high number of grid customers concerned.

Existing grid and telecom infrastructures cannot cover such high requirements, and today there are no solutions available to secure data privacy. When defining the requirements for the NCs, the FG should require taking into account the following:

- need for specifications of "real-time" (e.g. latency) and required "real-time" data of consuming and producing systems
- need for definition of affected grid users (e.g. clear description of the characteristics of "significant users" and the specific requirements
- need for and availability of required new devices (e.g. smart meters , gateways or DG devices) and related standards to carry out measuring and control functions
- availability of needed standards for algorithms and information exchange
- available definition and appropriate integration of new market roles
- existing national legislation and regulation
- need of compliance with data security and data privacy principles (see recommendations of Smart Grid Taskforce EG2)

The reason for this is that in our experience and understanding of the current situation the balance of costs and benefits with regard to "real-time" information exchange with distributed generation and the large numbers of grid users in this field are not evident:

1. The description in Art 1.4 linking real-time information sharing with the delivery of data planned for in the Comitology Guidelines on Fundamental Data Transparency is not consistent: Fundamental data transparency for market needs as planned in the Transparency guideline is not requested to be realized in real-time but on an hourly basis.
2. Today there is no telecom infrastructure that is able to handle a homogeneous real-time communication all over a country. "Real-time" will also produce extremely high costs.
3. There has to be a clear purpose of the data collection and data exchange of DSOs with TSOs with regard to the operation of the distribution grid and grid users connected to it. Unless this is not clear there is a conflict with data security principles.

Therefore real-time data exchange needs to be limited to the necessary level to keep costs and benefits in line and control risks related to data security requirements. The FG should

clearly state that *"the necessary information shall be clearly and transparently defined and agreed with the DSOs"*, as stated under "General System Operation Characteristics.

Where information is required from, or is to be provided to, grid users, it is important that they are involved in defining the data to be exchanged and how this is to take place. In a number of places in the draft guideline it is stated that TSOs will agree this without reference to grid users.

New applications

In addition with regard to Topic 6, "New applications", we are of the opinion that issues such as "dynamic rating of power lines ...", "close interaction of balancing markets ..." and "coordinated use of phase shifting ..." are already part of system operation today and do not require special consideration and should be dealt with as part of the NCs for operational security etc. In general, we see a strong need that the NC(s) should be formulated in technology neutral way in order not to hinder integration of new applications and keep flexibility for new developments.

3. Are the proposed levels of harmonisation sufficient to solve these challenges?

We generally agree with the levels of harmonization as identified in the draft FG (table 1, p. 6). However, there is a need for differentiation: harmonization is not to be understood as a goal by itself, any measure in this context should be based on clearly proved benefits. With regard to the strengthened role of DSOs in system operations, it should be scrutinized thoroughly to assess whether different rules set by different national regulators really pose a problem for secure operation of the system on a European level. In any case, the principle of subsidiarity should be applied.

In the field of the market related issues there is a need for a further degree of harmonization in terms of similar market design principles being used across the EU, including the functioning of system operation and its interaction with balancing and traded markets. Across the board, the objective of liquid wholesale markets and retail competition should be underlined.

We see a need for further clarification of the link between the objectives listed in the part "Scope" of the draft FG and the ones listed in the part "Structure". Table 1 and the further break down of the listed issues in the FG should be more specific.

We understand that the definition of significant user is an instrument introduced to focus European wide harmonization in the new field of definition of harmonized rules for DSO-TSO relations and with grid users to a level where there is really a benefit. We support this differentiation, however, a definition of the term "significant user" and the process for decision with clear and consistent criteria has to be provided for in the FG. In a consequent hierarchy, any definition and decision on significant users in the field of Grid Connection has

to be based on proven requirements for System Operation (today and in future) and only arrived at following consultation with grid users who are likely to be affected.

4. Should the Framework Guidelines be more specific with regard to areas that need to be harmonised, both across and within synchronous areas?

Yes, in our view the Framework Guidelines should give clear guidelines how to define the necessary harmonization. For new issues such as integration of generation from renewables within synchronous areas, the FG should clearly state the need of cost benefit analysis and how this cost benefit analysis has to be structured (see above Q3).

To our understanding, rules for System Operation inside the ENTSO-E area and the other synchronous areas already exist and should be part of the NCs to the necessary extend. Established rules for system operation within synchronous areas e.g. EN, IEC and (UCTE) Handbooks and relevant national rules have to be preserved as far as appropriate to allow for achievement of the goals. Every new rule on European level has to be essential and balanced between necessity and benefit especially when linked to additional investment in technical installations. Harmonization across synchronous areas should be limited to inter-TSO issues and should not require changes from DSOs and grid users.

In the fields relevant for interaction of system operation and well functioning wholesale markets there should be a higher degree of harmonization between national and cross border systems. Generally speaking, we agree with ACER's assessment that all aspects of system operation in transmission network have cross border aspects due to laws of physics, especially for synchronized areas. In addition, system operation also has a cross border impact through the effect on wholesale markets. Yet, in this context, transparency plays an important role. We would like to see transparency around TSO actions like redispatch volumes, related costs and details of grid related market restrictions etc.

5. Should the Framework Guidelines require the development of common rules for System Operation between synchronous areas?

Yes, as the degree of interconnection between synchronous areas will increase, the FG shall develop common rules for operating the interconnection lines (mostly HVDC), such as scheduling, emergency reserve, etc. in order to make as much capacity as possible available to the market. Methodology for bringing capacities to the market is primarily task of CACM.

Harmonization across synchronous areas should be limited to inter-TSO issues and should not request additional burdens or costs for DSOs and grid users resulting from such rules.

6. Considering the current arrangements of the system operation rules and procedures throughout the EU, what would be an appropriate level of detail for the Network Code(s) on System Operation?

The network codes should be relatively detailed and ensure close co-operation of TSOs.

7. What key benefits and types of cost would you expect for compliance with these requirements? Please quantify from your point of view.

As mentioned above, from our point of view, secure operation of the power system and maintaining its stability taking into consideration new challenges, like integration of RES or implementation of the EU wide integrated power market, are the basic intentions and intended major benefits of the FG System Operation and the related NCs. Already today there is a high standard of system stability and changes should be limited to the necessary and proven extend.

From a perspective of DSO and grid users, the costs for information exchange between grid users and the costs for compliance monitoring can be expected as the most relevant cost drivers. As stated above, especially in respect to information exchange but also for compliance issues, cost economy and technical feasibility should be reviewed before setting final rules in the FG as basis for the NCs.

In our opinion, it would be appropriate and beneficial if the general rules in the FG and later requirements in the NCs related to information exchange are discussed in time with the relevant bodies of CEN/CENELEC/ETSI working under Mandate 490 to review existing and needed standards for smart grids especially where it concerns the TSO-DSO relation and the relation with final grid users.

Any new rule causing additional costs for existing or future investments for DSOs should only be set after a clear proof of the efficiency of the measure and a cost-benefit analysis. Cost recovery through regulated grid fees has to be secured.

The system operation rules should enable generators to continue to plan and run power plant schedules in a market-based way, with minimal restrictions due to system management or grid capacities (*See also Q8.*) Laying down increased requirements for black-start capability, reactive power, load frequency control etc. in the NC(s) would increase investment costs for existing power plants. Should this particularly be the case, national regulators should allocate the investment costs to those originating the new requirements and/or - where necessary - granting derogations for those existing plant that cannot meet them.

As a basic rule generators should be paid adequately for system services (Black start, reactive power...) by TSOs and DSOs (where appropriate); costs for system services purchased have to be include in grid usage fees. The relevant methodology for design of the

reserve and balancing market incl. remuneration has to be defined in the FG and NC on balancing.

8. Should the Framework Guidelines be more precise on organisational aspects of operational security, in particular with regard to security assessment?

The FG should state that the methodology for definition of security criteria and setting the reliability margin have to be well balanced between security and needs of power plant operation and market. The methodology has to be made transparent and discussed with market parties. The FG should define rules for setting the reliability margin at the appropriate level so that maximum capacity can be allocated to the market while complying with safety standards of secure network operation (Article 16.3 of Regulation (EC) 714/2009). In this respect common rules would ensure that system operators consider a range of different remedial action for dealing with problem situations rather than, for example, simply curtailing cross border capacity.

There has to be a clear assignment of roles and responsibilities of TSOs and DSOs, based on the Network Operators relationships among each other. Also the term "Security assessments" should be specified in more detail. Security may be broken down into secure infrastructure, data security etc. It has to be ensured that all technical standards and rules are consistent for all affected market participants and every responsibility is clearly linked with the necessary power for enforcement.

As pointed out in our answer to Q2 in relation to information exchange, the FG should determine the NC(s) to take into account the aspects of data security.

Specific Issues

9. Are the implications for *significant grid users* clear and relevant?

The definition and the process for identification of *significant grid users* have to be fully consistent over all related FGs and NCs especially between System Operation and Grid Connection with System Operation defining the basis for requirements (see also Q3). There is a need for further clarification of definitions and the process for identification of significant users.

In addition, there is a problem in sequence of FGs and NCs to be solved: as the FG Grid Connection is already published and there is a very narrow time schedule for elaboration of the NC Grid Connection there is a high necessity to provide a detailed view of further development of system operation in Europe as basis for evaluation of requirements in the NCs for Grid Connection. Currently we do not see the definition of significant grid users correctly adapted to the IIA.

10. Are the roles and responsibilities sufficiently addressed?

Please see our answer to Q8 with our consideration for the need of a clear assignment of TSO- and DSO-business and responsibility in the FG and the request for a clearer definition of the scope of harmonization at the TSO-DSO interface and with final grid users including limitation where necessary.

Also, as stated above in the answer to Q2, there is the need for a fundamental check and review of the approach for information exchange. In our opinion, the description of the topics is currently too generic and not specific enough for the TSO-DSO relationship and the relationship with distributed generation with the potential to cause massive problems in data security and the handling of enormous amounts of information.

Furthermore new market roles (e.g. aggregators, VPP) and their definition in line with secure operation of the grid need also to be taken into consideration whilst keeping openness for the ongoing process of development in this field.

11. Are the individual provisions under Scope & Objectives, Criteria, Methodology & Tools, Roles & Responsibilities, Information Exchange and Implementation Issues, associated to the particular topic, adequate? Should there be any additional elements?

Please see our comments in the questions above, particularly Q2 on aspects which ought to be further detailed.

Integration of DSOs in the topic "Scheduling" should be clearly limited to the extent where DSOs' installations play a role in cross border exchange, which is normally not the case. With regard to "Load-Frequency-Control" this is the responsibility of the TSOs. Care has to be taken that the DSOs do not get additional unnecessary tasks and costs. With regard to requirements on DSO level e.g. implementation of controllable load and demand side management, the FG should clearly request the participation of DSOs in the elaboration of the NC. With regard to the definition of significant user, we refer to our answer to Q3.

General System Operation Characteristics

When it comes to the Obligation for data delivery System Operators must justify the information that they request from grid users particularly if the information is commercially sensitive. Any information should be for planning purposes only and there should be no sanction if generators depart from these generic values on the basis of commercial decisions in the operational time frame. Commercial information should only be provided to TSOs and should not be made public.



Topic 1: Operational Security

We wonder why another NC under the FG System Operation shall be drafted dealing with building a common grid model and the thereto related data exchange while currently the NC Capacity Calculation under the FG CACM deals already with these issues.

Topic 4: Staff Training and Certification

It is correct to specify knowledge of the English language and simulator trainings as requirements for TSOs, but there is no general necessity for the DSO grid operators as they are not involved in cross border grid operation.

Topic 5: Emergency and Restoration

There must be a discussion in this section of when and how reserve is used and its interaction with intraday and balancing markets. **The same applies to procedures for demand control, voltage reduction and load shedding.**

12. Could you foresee any other relevant New Applications which should be mentioned in these Framework Guidelines?

We do not see further topics already obvious today.

As stated above, in our opinion some of the issues mentioned are already today part of our daily business and should therefore be included in technology neutrally defined NCs.

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