

## ACER consultation – Framework Guidelines on System Operation

### EDF Response

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#### Personal Details

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#### Who we are

EDF SA is a French corporation involved in generation of electricity (with an installed electricity capacity of 97.2 GW, mainly nuclear and hydro) and supply of electricity, gas and associated services to nearly 28 million customers in France. In 2010, it represented 410.9 TWh of electricity and 21.4 TWh of natural gas. With an average 40.1 g of CO<sub>2</sub> per kWh generated, EDF SA is the leading provider of competitive and low-carbon energy solutions in Europe.

#### Introduction

EDF welcomes ACER's draft framework guidelines on system operation, which, from a general perspective, accurately and clearly structures the issues submitted to ENTSOE for technical drafting of the system operation (SO) network codes (NC).

EDF wishes to raise several general matters of concern on the present framework guidelines on system operation:

First of all, the definition of system operation rules shall go together with the definition of a decided and shared level of quality and security. ENTSOE mentioned during the last workshop, organized by ACER on the issue, that current “rules and operational practices, developed and improved over the last 50 years, are tested and confirmed by the high reliability of the systems”. EDF therefore understands that the current level of security is considered as appropriate and that future codification of SO rules through the NC would then build on these rules to mainly ensure greater coherence, applicability and enforcement to all relevant system users, and increased interoperability between synchronous systems.

In addition to these fine tuning actions on existing rules, several issues need to be anticipated (i.e. integration of variable and distributed generation). Still, these anticipations need to be cautiously addressed in order to avoid extra costs that could result from major over or under-evaluations. Finally, these anticipations (new applications) should not result in constraints for future technological developments.

More generally, as stated by ACER in these present framework guidelines, all types of deviations from existing and international standards, which appear rather unlikely considering that the level of security seems to be considered by ENTSOE as globally satisfactory (as commonly agreed), should rely upon effective, convincing and transparent technical and economic assessment.

Coming back to the question of the definition of system operation, it seems unclear whether the question of persons and goods’ security is implicitly considered as an objective or not. Indeed, from a technical and economic point of view, machine preservation shall be considered a first priority for grid reliability and consideration for grid users should stay at the heart of system operation rules, as a general principle.

Finally, the basic principles of system operation rules clearly reveal that other operational rules, such as grid connection requirements, should result from them, and not the way round. For EDF, SO rules should indeed, although not chosen as pilot codes, be considered as an umbrella topic.

Another important matter, somehow linked to the previous concerns, is the question of what responsibility sharing scheme is envisaged by ENTSOE.

System operation framework guidelines should recall TSOs missions and responsibilities. Indeed, symmetry should be ensured when addressing responsibilities of grid users (cf. grid connection NC) and TSOs. This expectation was raised by numerous stakeholders when consulted on grid connection issues and was to be answered to through SO requirements.

Then, if the general level of system security shall be maintained, the actual share of responsibilities between grid users and TSOs should be equally maintained. The appreciation of where ENTSOE actually sets the cursor between grid users’ and its own responsibility will in the end mainly rely upon deep technical analysis of NC requirements.

Indeed, the important deviations from present standards of certain grid connection requirements would appear unjustified if system operation standards were indeed to be confirmed and considered as offering a satisfying level of system security. Whether these deviations need to be reassessed in the light of newly issued system operation rules, (SO criteria obviously being a precondition for defining grid connection requirements), whether they reveal a shift of

responsibilities from TSOs to grid users, which could not be acceptable. In all cases, major changes of disclosed grid connection requirements are necessary.

Still considering the tight links between SO and other works, EDF welcomes ACER's appreciation of the necessity to coordinate this work with TYNDP, balancing, reserve power markets, maintenance, CACM, and most directly, as stated above, grid connection issues.

On a more precise level, clarification would be needed on the fact that a common definition and qualification of significant grid users is used for both grid connection (GC) and SO issues. Also, and most importantly, It is uncertain whether the coherence of harmonisation zones between SO and GC codes is ensured. At last, it is unclear at the moment what aspects of balancing would be addressed under the SO angle or through specific balancing works. The articulation of ENTSOE works on the issue of balancing should then be clarified.

Considering more general issues, sometimes referred to as governance issues, EDF notes that ACER duly tackled the necessity for greater consultation, transparency and justification of NC requirements, and that ENTSOE will consequently effectively open the way to further improvements.

Still, for now, the question of cost benefit analyses seems unaddressed as no robust initiative has been disclosed yet. EDF believes that the general methodology principles of these CBA should be common to most NC works and that greater visibility should be provided to stakeholders, as to ENTSOE, on the precise collective expectations. The idea of integrating general CBA principles and methodology to the expected ACER governance guidelines may be a way to achieve this.

Indeed, for EDF, all notable changes should be subject to positive analysis of their relevance (on the three economical, technical and regulatory angles) and upon a common and shared methodology.

No rational confidence from stakeholders nor institutions that foreseen requirements would ensure both collective and fair benefit could emerge if the most basic need for justification was to be unanswered. Yes, indeed, the question of realising relevant and systematic CBA raises resources concerns, in particular as a result of the complexity of such analysis, but this should not prevail over elementary justification of choices, especially when binding for the collectivity.

Greater confidence could also be achieved through tighter consultation process and the creation of an ENTSOE user group (equivalent to what has been done for market codes) would necessary help in that regard.

Finally, for EDF, the SO (as others) technical requirements should be kept proportionate to what is necessary to reach the objectives set by the third package, and leave room to subsidiarity when appropriate in order to avoid excessive and counter-productive rigidity, and unnecessary challenges. The first consultation steps revealed that ENTSOE started work on that direction for system operation works. EDF expects similar approach to be applied to the final NC draft on grid connection.

## 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?**

The system operation problems identified through the initial impact assessment are, indeed, of growing importance. They both plead for better TSO coordination, especially, for instance, when balancing power and load at market changes hours. Moreover, increased TSO coordination will result in greater optimization of offered interconnection capacity, with both positive technical and market impacts. Therefore, EDF considers TSO operational coordination as a key cross border challenge for improved system operation and market integration.

- 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?**

From EDF's point of view, the different topics are well identified and structured. Nevertheless, some improvements could be brought to:

- Data exchange: the scope of these data exchange for system operation should be consistent with other data exchange frameworks (comitology guidelines on data fundamental transparency) in order to avoid any unjustified cost from inappropriate or redundant request. As addressed over general comments on CBA, EDF wishes that costs of implementation are taken into consideration when designing these requirements. . Moreover, data exchange actions should probably be addressed into more detail and consideration for data security and confidentiality should be brought to the issue.
- Redispatch shall be defined in the FG. EDF considers redispatch as actions undertaken solely by TSOs on units, after market gate closure and last generators scheduling settlement, to solve potential network constraints and temporary system security issues (overloads, stability, ..). Operational and financial responsibilities should be clearly stated in the NC and consistency with other works be ensured.
- The question of CBA is addressed at different levels in these draft FG, and not systematically in each topic. This issue should probably be treated as an umbrella matter in these FG and, as stated in the introduction, developed in the governance guidelines.

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

EDF considers that the proposed levels of harmonization should be made coherent with those chosen for grid connection issues.

Moreover, EDF recommends a case-by-case approach as these levels of harmonization will not make sense for all technical issues (for instance some security criteria do not need to be EU

aligned, as n-1 rule for poles or circuits, or no rationale would justify to align frequency ranges between UK and continental Europe). Harmonization should then be focused on principles, and not necessarily precise figures (which, for instance, could depend on matters and size of the synchronous area). Flexibility would then be offered to take into consideration each area specificities.

From a more general view on the question of harmonization, the technical requirements should be kept proportionate to what is necessary to attain the objectives set by the third package, and leave room to subsidiarity when appropriate in order to avoid excessive and counter-productive rigidity. The first consultation steps revealed that ENTSOE started work on that direction for system operation issues. EDF expects similar approach to be applied to the final NC draft on grid connection.

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

Without regard to the level of harmonization chosen for a SO requirement, the other NCs concerned by this requirement shall have the same harmonization level i.e. it would not make sense to have harmonized frequency ranges for SO in a synchronous area without having the same harmonization level for the grid connection NC mirror requirements.

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

The level of interconnection of synchronous areas will keep on increasing and require a common approach to the operation of interconnection lines, in order to both increase system flexibility and maximize capacities offered to the market. Foreseen evolutions should not merely result in stacking additional security margins, but seek to ensure economic efficiency in the use of interconnection capacity.

Concerning emergency & restoration matters, synchronous areas should be able to perform cross support. Considering operational planning, wholesale and day ahead markets in a synchronous zone should take into consideration power exchanges between other synchronous areas.

In all cases, possible evolutions should be justified on technical, economic and regulatory grounds.

#### **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?**

Detailed input to this question is difficult as a case-by-case approach would be necessary.

As a more general comment, EDF believes that, considering the satisfying level of security brought by actual system operation rules, NC should build on existing rules (i.e. operational handbook of UCTE) and focus on weaknesses where improvements are justified to be appropriate and necessary.

Moreover, the NC should focus on objectives and not means in order not to constitute irrelevant sources of costs, provide subsidies to specific industries, or hamper further technological developments.

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

Benefits would obviously and straightly be linked to maintained or improved system security (avoided costs). It is EDF expectation that harmonization and coordination between TSOs should facilitate this goal.

Main costs would be related to organizational changes, upgrade, maintenance and compliance monitoring costs, impacts on machines durability and investments costs, IT and information system developments/changes.

Apart from cost and benefit quantification issues, that will need further in depth work from ENTSOE and stakeholders, the questions of cost allocation and split incentive concerns will have to be addressed.

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

EDF believes that the network code is well suited to be more precise on organizational aspects of operational security.

Nevertheless, this is a subject for which the framework guidelines should provide for principles concerning TSOs responsibilities. Any organizational changes, considering their possible impact on all stakeholders, should be submitted to proper cost benefit analysis.

Moreover, some indications on what aspects should notably be covered would be needed in order to bring more visibility to all stakeholders on this issue. For instance, considering that operational security shall be assessed on the basis of a definition for abnormal events and quality and security criteria, the FG should require NC to propose:

- The power quality criteria (examples: frequency and voltages deviations at the grid user connection points, numbers of re-dispatch units, number and duration of loss of power at grid user connection points, ratio reserve used/reserve scheduled..).
- A standard process to review periodically the power quality criteria.

## Specific Issues

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

Detailed input to this question is difficult considering the high level principles stated at the moment. Clarification on the foreseen definition of significant users and the contents of the codes will allow better understanding of the implications.

EDF understands that a common definition and qualification of significant grid users is used for both grid connection (GC) and SO issues. Though uncontested, this aspect might call for clarification.

As mentioned above, the creation of an ENTSOE user group (equivalent to what has been done for market codes) would necessary help in that regard.

### **10. Are the roles and responsibilities sufficiently addressed?**

For EDF, and considering the very detailed and extensive vision of grid users that ENTSOE developed when addressing grid connection issues, a symmetric description of TSOs responsibilities, missions and obligations would be relevant in the scope of these SO framework guidelines.

Moreover, clearer conception of TSO and DSO responsibilities would bring clarity to the whole NC work and quality to its implementation. Numerous stakeholders mentioned, across all consultations on these issues, greater responsibility of DSOs than recognized. DSOs position in these debates should then probably be reconsidered.

### **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?**

The individual provisions are globally clear and well structured but appeal for some general comments:

As mentioned above, the question of CBA is addressed at different levels in these draft FG, and not systematically in each topic. This issue should probably be treated as an umbrella matter in these FG.

Moreover, grid users are not mentioned in a homogeneous way. For instance, frequency matters explicitly impact significant users whereas they are not mentioned when voltage matters are addressed.

The improvements brought to these operational rules should not undermine references to market rules as far as necessary. Indeed, mechanisms that would ensure proper cost coverage of

ancillary services procurement (power management, black start capacities...) should be more explicitly addressed. The same principles of economic efficiency and fair cost allocation should apply to outage planning compensation.

EDF proposes the following detailed comments per topic:

- Topic 1:
  - The definition of operational security does not suit the requirements of the third sentence of table Topic 1, row methodology, which seems inspired mainly by the 2006 Nov. 4th outage. As discussed in the introduction, the security of persons and goods shall be taken into consideration.
  - The provisions of the network codes on system operation shall be consistent with grid connection and balancing network codes provisions. The network code shall clearly identify which are the requirements necessary to operational security and allocated to grid users in other network codes. This consistency has been discussed in introduction.
  - Information exchange: clarification of “network configuration” is needed (e.g. shall include real time data on voltage profile, active and reactive power flows, topology, demand distribution by electrical node).
  
- Topic 2:
  - One general issue is the inability for the receiving TSO to use some information coming from another TSO (e.g. the declaration of a scheduled outage of a line might impact another TSO, however, this TSO does not have enough complementary data (e.g. state estimation of the neighboring TSO) to use the outage information). This issue might be addressed in the responsibility row.
  - The consequences of network unplanned outages on generation units should be harmonized to use same principles to different situation (redispatch, organizational, technical and financial rules) .
  - The network codes should define principles, requirements and methodology to achieve scheduling of network maintenance vs. generation planning. Provisions to solve conflicting situations should be proposed.
  - The NC shall identify clearly which are the requirements necessary for operational planning and scheduling and allocated to grid users in other network codes.
  
- Topic 3:
  - The network code should define and justify the load frequency control strategy by synchronous area and its implementation in the local grid codes shall be justified at local level. The network code shall identify clearly which are the



requirements necessary for the load frequency control and their allocation to grid users in other network codes. Generators need visibility on ancillary services needs to develop least costs solutions.

- Large and repeated frequency deviations in normal system operation shall be taken into account in the frequency quality criteria in the network codes. Large and repeated frequency deviations in normal system operation decrease plant reliability and increase plant operation costs.
- The “TSOs’ requirements for the implementation of controllable generation [...]” shall be inserted in the grid connection network code.
- Topic 5:
  - Specific needs of network users based on national regulation (ex: security requirements) should be taken into account with a high priority level in the elaboration of restoration plans (e.g. fast power restoration on nuclear plants).
  - The NC should propose minimum requirements to inform significant grid users in case of alert and critical operating states. Because their contribution to the system restoration, duties of significant grid users in such situations should be clearly stated.

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

No comment.

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