

Position Paper

On ENTSO-E's "Draft Network Code on Emergency and Restoration" (NC ER) dated 25 March 2015

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Introduction

The German Association of Energy and Water Industries (BDEW) represents over 1,900 members of the electricity, gas and water industry. In the energy sector, BDEW represents companies active in generation, trading, transmission, distribution and retail.

BDEW acknowledges that ENTSO-E took notice of some of the remarks presented in our previous position paper dated 8 December 2014 in reaction to ENTSO-E's draft Network Code on Emergency and Restorations (NC ER) dated 13 October 2014. Since not all our comments have been taken into consideration in the new version of the Network Code which was forwarded to ACER, BDEW welcomes very much that ACER gives the opportunity to comment once again on the revised draft NC, dated 25 March 2015.

Taking into account that the German transmission system operators (TSOs) organised within BDEW are, among others, responsible for the drafting and finishing of the consultation document, the BDEW Position Paper is developed with the abstention of the German TSOs, in order not to influence the final result of the consultation.

Executive Summary

The most important aspects the NC ER has to ensure are the following:

- The NC ER has to be consistent with the other ENTSO-E Network Codes; definitions should be aligned between all codes in order to avoid legal uncertainty and to achieve a clear understanding of the requirements and responsibilities by all involved parties.
- In view of the rising number of production units connected to distribution networks, a good coordination between TSOs and Distribution System Operators (DSOs) and clear responsibilities for their respective grids becomes an indispensable prerequisite for system security. This implies active DSO involvement in major fields of action such as the preparation, execution and restoration of defence plans as well as restoration plans. The provisions in the revised NC are still not sufficient to fulfil these requirements since they still allow unilateral decision-making by TSOs on fundamental concepts with regard to grid safety and security.
- In the field of automatic under-frequency control, some aspects of the demand disconnection requirements still seem too ambitious and should be reviewed.
- In Germany 8 to 12 hours backup power for DSO-connected facilities are sufficient to guarantee high quality of supply. Considerable investments will be necessary to adapt the existing infrastructure to the 24 hours availability as required in Art. 40 of the present draft NC. BDEW suggests making up recommendations for the prioritisation of these investments, weighing the benefits for the respective network area and the investment costs. If manual solutions are meant to fall under the 24 hours availability requirement, as ENTSO-E states, this has to be made explicit in the text.
- One step for the completion of the internal energy market is the enforcement of cross-border participation in capacity markets. The NC ER should provide that TSOs, also in emergency states, take into account contracted generation capacity or other resources for adequacy purposes with neighbouring TSOs.
- The beginning and the end of the system states described have to be clearly defined, as well as the procedures and the communication of the re-entry of the normal system state.

General aspects

Interrelation between network codes, definitions

As already mentioned in previous statements on different draft network codes, consistency between the different codes is of high importance. BDEW welcomes that the draft NC ER refers to existing requirements and definitions defined in the Grid Connection (RfG, DCC) and the System Operation (OS, OPS, LFCR) Network Codes.

Also the term “Significant Grid Users” (SGUs) should be defined once, preferably in the Operational Security Network Code (OS NC) as the “umbrella code” for all System Operation Codes. The NC ER should refer to this definition. Please mind that misunderstanding can evolve from the context in which this term is used (see below on Art. 16).

Further cooperation between TSOs and DSOs

Maintaining system security requires a close coordination of all players in the electricity sector. Consequently, a previous NC ER draft version was constructed such that TSOs and DSOs would coordinate their activities concerning defence plan preparation, execution of the planned measures and system restoration. This concept was welcomed by BDEW.

However, the draft NC dated 13 October 2014 provided a different concept: when elaborating their defence plan, the TSOs only have *to consult* other stakeholders, including DSOs. Following Art. 5 of the draft NC (Art. 6 of the revised version), *consultation* implies a far weaker stakeholder commitment than *coordination*: stakeholders’ views and information are being collected, but the final decision-making on the concepts and procedures is left up to the TSO.

BDEW was very concerned ENTSO-E planned to apply this unilateral decision-making process to fundamental fields of grid safety like the design of the system defence plan in Art. 8 (Art. 9 of the revised version), as most defence tools are connected to the distribution network and their settings and activation must be built together with the DSOs. Therefore, in its position paper dated 8 December 2014, BDEW distinctly articulated its arguments and emphatically asked ENTSO-E to adapt the provisions of the NC ER such that a close cooperation between DSOs and TSOs is being guaranteed.

Regrettably, these points were not incorporated in the final draft version of the Network Code dated 25 March 2015. Following Art. 9 (1) and 21 (1), the revised NC still provides to apply the weak form of stakeholder involvement (“*consultation*”) to the design of the system defence plan and the restoration plan, respectively. This is not appropriate. It is not only the TSO who has to implement restoration measures in his grid, so if equivalent measures in DSO grids are necessary they cannot be determined without the DSOs’ approval. Fundamental provisions for grid safety have to be subject to conjoint decisions of the parties involved, namely TSOs and DSOs. Turned in more general words, close cooperation and mutual consensus between DSOs and TSOs are major prerequisites for safe and secure grid operation. Therefore, BDEW emphatically appeals to ACER to review the provisions in the network code accordingly. Please find the BDEW arguments in the position paper dated 8 December 2014 which will be sent alongside with this paper.

Chapter 2: System Defence Plan

Article 14: Automatic under-frequency control scheme

BDEW welcomes that ENTSO-E adapted the measuring units in table 1 to “% of the Total Load at national level”. This makes the provision much clearer than in the previous draft NC.

Yet, the number of steps and the range of the steps in the demand disconnection scheme are still too challenging. The specifications used today will not comply with the provisions proposed. Thus, costly and time-consuming refitting processes will be the consequence, while the benefit for grid security is expected to be negligible. BDEW therefore asks for a more pragmatic approach which would prevent extensive relay exchange processes and give network operators and network users more time to adapt their equipment. The definition of technical solutions should be left to the responsible institutions.

Besides, the exact frequency intervals in which the frequency relays have to measure and operate are not clear. Today, in Germany the frequency intervals of 300 mHz prevail. With the NC, the intervals would be reduced to only 166 to 100 mHz. This is critical since a certain time period is necessary to measure before the next step is being executed. In this context BDEW wants to remind that it is not possible “to shed load in real time”, as said in Art. 14 (4). A minimum time period to measure the frequency after each measure is necessary.

Art. 14 (6) b) says that each TSO and/or DSO shall minimise the disconnection of Power Generating Modules and especially those providing Inertia. However, due to the regional mixture of generation and demand in many distribution networks, DSOs cannot completely avoid to disconnect power generation since there are no other measures than disconnecting sub-networks and feeders available. In this context a fixed obligation to “minimise” the disconnection of Power Generating Modules is problematic, even if the TSO is entitled to prioritise, if need is, between the requirements under Art. 14 (6) b) and c). BDEW proposes to harmonise the wording in both requirements and to replace the expression “minimise” under b) by “limit”, as is already the case in c).

Art. 14 (7) says that the TSO may include, under certain circumstances, a demand disconnection based on a frequency gradient. This provision enables the TSO to introduce a new technical requirement which has not yet been tested in practice. Before applying such a rule, the technical implications for the affected parties should be examined, taking into account, among others, implementation costs of new types of frequency relays.

Article 16: Voltage deviation management procedure

In this article, there is still the danger of misunderstanding due to unclear definitions, as presented in our previous position paper. Art. 16 (2) could mistakenly be understood such that the provision addresses to significant grid users connected to distribution networks. By doing so, chances are that a TSO action could put the distribution network’s operational security at risk and create a greater threat to overall network stability. One network operator should therefore not interact directly with a grid user connected to another network. In the interest of

clarity, BDEW proposes to insert the words “transmission connected” before the term “significant grid users”.

Chapter 4: Market Interactions

Article 34: Rules and conditions for suspension and restoration of market activities

From BDEW’s point of view, the conditions for restoration should be made more explicit. Therefore, the following changes are proposed.

Paragraph 2 should be reviewed as follows:

“2. The rules and conditions for suspension of market activities shall ~~cover at least~~ reflect situations of Force Majeure which prevent market operation and situations where prolongation of market activities would worsen the conditions of the Transmission System being in Emergency State.”

Paragraph 4 (rules and conditions for suspension of market activities) shall comprise all parameters which have to be considered by the TSO. Therefore, the words “at least” in the first sentence should be deleted.

The rules and conditions under which market activities can be restored (paragraph 5) shall be made clearer. The following parameters shall be added:

- Black start capacities running
- a percentage of the reconnected load (not only the remaining load disconnection)
- a percentage of the reconnected thermal and/or RES capacities
- time constants for generators and suppliers to choose for delivering schedules to TSOs (with respect to the specific market area in which the generator is located)
- the time when cross border trading can restart.

Besides, it should be considered to add the word “cumulatively” at the end of the first sentence of paragraph 5 in order to underline that all these parameters have to be taken into consideration.

As an editorial remark BDEW asks to review the numbering of the parameter list since the characters e) and f) are skipped.

Article 36: Communication procedure

The communication procedure in the event of an emergency is extremely important. BDEW believes that, in developing the communication procedure, approval from the relevant NRA should be required. It should also include the requirement for TSOs to inform relevant parties of suspension / restoration as soon as possible.

Chapter 5: Information Exchange and Communication, Tools and Facilities

Article 39: Communication Systems

Article 39 of the draft NC prescribes that DSOs, significant grid users, TSOs and restoration service providers have to dispose of at least one redundant voice communication system to exchange the necessary information for the restoration plan. However, the responsibilities for the installation and the operation of these communication systems remain unclear. BDEW holds the view that, for reasons of practicability and cost efficiency, a standardised system integrating the different actors involved has to be set up and run by one central unit, which should preferably be the TSO. BDEW therefore suggests adding a third paragraph to Art. 39:

“3. The required unique and standardised voice and data communication systems should be installed and operated by TSO.”

As for the backup power supply requirement defined in paragraph 1 of article 39, BDEW's comments on article 40 (see below) apply accordingly.

Article 40: Tools and facilities

Article 40 of the present draft NC requires backup power for critical tools and facilities for at least 24 hours. As already stated in December 2014, BDEW considers these provisions to be too ambitious.

BDEW acknowledges that a high level of quality of supply is of utmost importance for the European economies and the safety and health of their inhabitants. At the same time BDEW realises that current technical guidelines in Germany require backup power for facilities in the distribution system for 8 to 12 hours. Until today, these provisions are sufficient to guarantee a high quality of supply in Germany, as they are flanked by operational measures to ensure successful re-energisation of networks. This is ensured by the fundamental operational guideline to put the whole network to a defined state by opening all circuit breakers when experiencing a blackout. By doing so, unintended re-energisation of grid elements and subnetworks are avoided. Re-energisation is then carried out by TSOs and DSOs following predefined and trained plans relying on the defined state as described above. Simulations and trainings in Germany show that this operational principle is suitable even for high values of distributed generation.

German DSOs acknowledge that other electricity systems in Europe such as Great Britain already use backup power with higher rated batteries. Yet, requiring 24 hours backup power in all regions would induce considerable investments which would culminate to expected 330 million € for Germany only. These costs can only be borne over a time period of several years, and financial means have to be used in the most effective way.

BDEW therefore waves for requiring the above described operational principle instead of high battery capacities and thus avoiding unnecessary costs for the public. Today's best practices from regions with high quality of supply such as Germany should be taken into due account. Informally, ENTSO-E explained that Art. 40 of the draft NC is to be understood such that the 24 hours backup power requirement does not necessarily imply battery capacities but can

also be fulfilled manually. BDEW would welcome this but asks to clarify this in the text, since the current draft NC does not mirror this understanding.

Chapter 6: Compliance and Review

Article 42: Compliance testing of Power Generating Module capabilities

The NC should comprise a provision to refund restoration service providers for their expenditures caused by the testing procedures. BDEW suggests adding a third paragraph to Art. 42:

“3. Each Restoration Service Provider which is a Power Generating Module shall get an appropriate refund for executing Black Start Capability and Household Operation capability tests following the methodologies described in Articles 39(5) and 39(6) [NC RfG].”

Chapter 8: Final Provisions

Article 53: Entry into force

BDEW very much welcomes that the draft NC provides a 5-year period for the entry into force of Art. 14, Art. 39 as well as Art. 40 (1), (2) and (5). From a DSO perspective, considerable investments will have to be fulfilled under these Articles as formulated in the present NC. The financial burden incurred can be smoothed by the 5-year period.

Contact:
