**BDEW Bundesverband der Energie- und Wasserwirtschaft e.V.**
Reinhardtstraße 32
10117 Berlin

## Position Paper

# On ENTSO-E's "Draft Network Code on Emergency and Restoration" (NC ER)

Berlin, December 8, 2014

Interest Representative Register ID: 20457441380-38

## 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 welcomes the opportunity to comment on ENTSO-E´s Draft Network Code (NC) on Emergency and Restorations (NC ER), dated 13 October 2014. 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.

As ENTSO-E announced a separate consultation for the market interactions chapter and the automatic low Frequency control scheme, these topics are not covered by this position paper.

## 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.
- Maintaining system security requires a close coordination of all players in the electricity sector. In view of the rising number of production units connected to distribution networks, a good coordination between TSOs and Distribution System Operators (DSOs) becomes an indispensable prerequisite. This implies active DSO involvement in defence plan preparation, execution and restoration. Only a partnership between TSOs and DSOs with clear responsibilities for their respective grids will help to keep the electricity system secure and reliable.
- Already today, a vast majority of the generators are connected to the distribution grids. In Germany, more than 1 million photovoltaic power plants have been installed in the last ten years. Including these plants into the emergency and restoration activities defined in the NC ER would induce huge infrastructure costs which would by far outweigh the benefits; thus, type A generators should currently not be addressed by the requirements of the NC ER. In case of a positive cost-benefit-ratio in the future, those generators can be included using the already defined amendment process.
- In Germany 8 to 12 hours backup power for DSO-connected facilities are still sufficient to guarantee high quality of supply. Considerable efforts will be necessary to adapt the existing infrastructure to the 24 hours availability as required in Article 39 of the draft NC. BDEW suggests making up recommendations for the prioritisation of investments, taking into account the benefits from an advanced level of backup power in the network area under consideration and the costs of the respective investment.
- 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.

## Interrelation between network codes, definitions

As already discussed in the drafting processes of previous 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.

However, the definition of "Significant Grid Users" (SGUs) differs between the draft Operational Security Network Code (OS NC) and the draft NC ER. This may lead to misunderstanding and should be avoided. Since the OS NC was meant to be the umbrella code for all System Operation Codes the definition of SGUs should be laid down in the OS NC and be applied in this way in all Network Codes.

Alternatively, all definitions and abbreviations used in the different network codes could be gathered in one separate glossary document which could be referred to by all ENTSO-E network codes.

## 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 current draft NC dated 13 October 2014 provides a different concept: when elaborating their defence plan, the TSOs only have *to consult* other stakeholders, including DSOs. Following Article 5, *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 is very concerned by this unilateral decision-making process, as it deviates significantly from German processes used successfully for decades. Undoubtedly, emergency and restoration actions, also those taking place in distribution networks, aim at supporting TSOs in their responsibility of keeping the overall system safe and stable. Therefore, they must be designed and activated according to the TSOs' needs. However, as the main defence tools are connected to the distribution network, their settings and activation must be built together with DSOs. This implies that the DSOs are actively involved especially in two ways:

- Data collection for generation units connected to DSO networks should be executed via the DSO. If a TSO needs data on generators connected to a distribution grid, it should address its request to the relevant DSO directly. The DSO should be the single point of contact for DSO-connected grid users as is the TSO for TSO-connected grid users.
- TSOs should not be able to act actively on distribution grid users. Especially with regard to the disconnection of SGUs in case of emergency (article 15 of the draft NC) it should be provided that DSOs are not "by-passed" by TSOs. Unilateral action by

TSOs without coordination could create stability problems at the local level, which could degenerate into a black-out. Apart from the direct security impacts, this may lead to controversies on the legal responsibility between TSO and DSO.

Notwithstanding their task to support the TSO for overall system security, the DSOs are responsible for their networks and their network users. In Germany, this principle is laid down in the current version of the German Energy Act of 7 July 2005 (§ 11 (1) and § 14 (1) Energiewirtschaftsgesetz), which assigns the safety and security of the distribution system to the relevant DSO. Thus, DSOs should not be considered as network users but also as system operators.

In view of the growing share of distributed energy resources in the electricity system, close coordination between TSOs and DSOs is already in place in many countries and has been proven to be successful. In Germany, under the guidance of BDEW and the German Association of Local Utilities (VKU), all TSOs and directly connected DSOs elaborated an action plan for coordinated system security procedures which is in place since 2012 and is being reviewed as and when required.[1]

The current draft NC ER lacks a commitment to this coordination between TSOs and DSOs. BDEW considers that implementing the current draft NC would endanger system security and thus be contradictory to the targets of the Network Code on Emergency and Restoration. Consequently, in order to maintain system security in today's and tomorrow's electricity systems, the NC ER has to be adapted such that it provides a concept of close coordination between TSOs and DSOs.

## Exempt type A generators from the NC ER

The requirements set by the draft network code imply to build up a considerable infrastructure to enable black-out proof real-time communication with generation units in order to control them in emergency and restoration phases. With regard to small generators of Type A, BDEW considers that the costs induced by such an infrastructure would by far outweigh the expected benefits. In Germany, more than 1 million photovoltaic power plants are already installed, most of which are type A generators. Including these generators into the emergency and restoration procedures would require inadequately high infrastructure investments and give rise to electricity prices without appropriate benefit. First assumptions show overall costs of up to 10 billion EURO for retrofitting existing type A generators in Germany. These costs appear unjustifiable given the limited benefit, since photovoltaic plants cannot be used for black start purposes at night, and even at daylight times their power production is not fully predictable as it depends on weather conditions.

[1] BDEW/VKU, October 2012: „Praxis-Leitfaden für unterstützende Maßnahmen von Stromnetzbetreibern – Kommunikations- und Anwendungs-Leitfaden zur Umsetzung der Systemverantwortung gemäß Paragraphen 13 Abs. 2, 14 Abs. 1 und 14 Abs. 1c EnWG", updated version as of 31 October 2014; online available at https://bdew.de/internet.nsf/id/DE_Vertrag--Systemverantwortung

If in future investigations show a positive cost-benefit-ratio, small generators can be included into the provisions of the NC ER using the already defined amendment process.

## Well-balanced requirements on backup power

The current draft of the NC Emergency and Restoration requires backup power for critical tools and facilities for at least 24 hours (Article 39 of the current draft combined with paragraph 5.5.3 of the supporting document). 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 were sufficient to guarantee a high quality of supply in Germany.

German DSOs acknowledge that other electricity systems in Europe such as Great Britain already use backup power with higher rated batteries. Chances are that also in Germany longer backup power availability will be necessary to maintain the high quality of supply in Germany compared to other Member States. Yet, when refining today's technical requirements in the way described by Article 39 of the current draft considerable investments have to be carried out which would culminate to expected 330 million EURO for Germany. 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. Thus, BDEW would like to ask ENTSO-E to present a concept assuring that enhancing backup power availability will best serve the enhancement of security of supply, enabling DSOs to prioritise their investments after sound assessment of the benefits and the costs of the single measures. Today's best practices from regions with high quality of supply such as Germany should be taken into due account.

## Take into account contracted generation capacity

Completing the European Internal Energy Market (IEM) implies that cross-border capacities are available in order to enable cross-border electricity contracts. In the case where two bordering countries are both in an emergency situation and where there is thus scarcity in exporting capacity between those countries, currently no legal tool exists to ensure the availability of cross-border capacities. Indeed, the current market coupling algorithm has a pro-rata rule and does not foresee capacity reservation for a certain country; and already drafted network codes and existing inter TSO agreements do not make this possible either.

Thus, BDEW recommends adopting an appropriate provision in the frame of the NC ER. Especially in Article 11 of the draft NC it should be added that, also in emergency states, the TSOs have to take into account contracted generation capacity or other resources for adequacy purposes with neighbouring TSOs.

## Clearly marked system states and re-entry of normal system state

For a legally certain application of the NC ER not only the measures to be taken in an emergency, black out and restoration system state have to be described, but also the beginning

and the end of these system states have to be clearly defined. The NC ER should describe how the beginning and the end of the respective system state – as well as the re-entry of the normal system state – is determined and how it is communicated to the stakeholders (especially regarding time-critical intraday trading).

**Contact:**