

# 3<sup>rd</sup> ENTSO-E Public workshop on Network Code on Emergency and Restoration

Date: 8 January 2015

Time: 13h00 – 17h00

Place: ENTSO-E premises, Brussels

## MINUTES

### Programme:

No	Subject	Time	Lead
1.	Registration and lunch	12:00-13:00	
2.	New LFDD article	13:00-15:00	<b>Laurent Lamy</b> <i>ENTSO-E Convenor of NC ER Drafting Team</i>
	ENTSO-E study on automatic low frequency demand disconnection presentation		<b>Giorgio Giannuzzi</b> Co-Convenor of System Protection and Dynamics expert group
	Q & A		Workshop participants
3.	New Market Interactions chapter	15:00-17:00	<b>Laurent Lamy</b> <i>ENTSO-E Convenor of NC ER Drafting Team</i>
	Q&A		Workshop participants
4.	End of Workshop	17:00	

## 1. Welcome, Introduction and code process status

Convenor of the drafting team for Emergency and Restoration, Laurent Lamy, welcomed the participants and explained the aim of the workshop: present and exchange views on Article dedicated to automatic low frequency control scheme (including Low Frequency Demand Disconnection (LFDD) scheme) and Market Interactions chapter.

## 2. New LFDD article – main concerns raised

- LFDD study for Continental Europe

ERDF representative comments the approach of performing the study, claiming that all the scenarios should not be taken into account equally; this study is not an academic study to find the theoretical optimal LFDD scheme, but a study to determine the LFDD settings to manage frequency deviation in a real system. Thus

the realistic scenarios should have more weight in such calculations as they are more common in the current system; the incident from November 2006 represents one of them.

DSO's representatives explained that it seems in-appropriate to change LFDD scheme across EU if the current schemes work fine. This has been also approved by real system incident in November 2006. Therefore the changes would introduce unnecessary costs for the consumer if changes are introduced across all EU.

- Priority users in NC ER

SSE representative is missing a guidance from NRA in paragraph 8(c) (of addenda Article 1) in order to protect high priority grid users from disconnection. Some criteria to be provided.

ENTSO-E answer: a reference to NC OS regarding high priority grid users is included in Articles 8 and 20, Design of the Plans. According to NC OS, this list of users is defined on national level with NRA.

- Total Load definition

Definition of Total Load in not clear enough.

ENTSO-E answer: The definition comes from transparency regulation 543/2013 → *Total Load, including losses without power used for energy storage, means a load equal to generation and any imports deducting any exports and power used for energy storage.*

- Cost benefit Analysis for new LFDD scheme

Eurelectric is wondering how costly the new requirements would be, costs benefits analysis should be provided in order to justify changes of LFDD scheme.

ENTSO-E answer: No such study has been performed so far, ENTSO-E follows the technical recommendation from the LFDD analysis (for Continental Europe). A gap analysis with current practices could be provided.

## Eurelectric presentation with main concerns on the LFDD scheme (for Continental Europe)

### LFDD Requirements - Proposed Table with parameters for LFDD scheme

- Existing control-command systems have been developed to match the need of each country – **new technical developments would be needed to implement this requirement**
- The proposed timeframe (**5 years**) is too short
- **The costs involved are extremely high** (assessment on-going, preliminary results for France only: 1Bn euro)

The requirement does not seem justified because:

- **Current schemes have proven reliable** in most countries in the recent past (November 2006). Is fine tuning really worth the cost? What are the benefits of the fine tuning?
- **The cost** of changing existing schemes quickly most likely **out weights potential benefits.**
- The **system inertia will not decrease dramatically** in the future (there are still large thermal and hydro power stations)

### LFDD Requirements – Paragraph 8 on implementation

- a) “Ensure no intentional time delay for Low Frequency Demand Disconnection is set additionally to the operating time of the relays and circuits breakers” => **delays can be useful to make sure relays react to a real event**
- b) “Ensure to minimise the total disconnected installed capacity of Power Generating module connected directly to its distribution system” => « **ensure to minimise** » **could be misleading and should be reframed**
- c) “Ensure that this scheme does not lead to power flow deviation and voltage deviation outside Operational Security limits”. => **In Emergency situation, normal limits do not apply.**

### Comments on ENTSO-E’s study

- Applying the LFDD requirements on the Nov 2006 event has not been performed. The performance would only be “yellow” according to the acceptance criteria. With the proposed scheme, less load would have been shed at 49Hz.
- Restoring the frequency within the range [49.9Hz, 50.1Hz] has been chosen as the criterion to assess the efficiency of LFDD schemes. According to this criterion and according to the frequency recording of Nov 4th 2006 event, the western European LFDD scheme was not efficient during this event. Is it really ENTSO-E’s view on this event?

### Questions on ENTSO-E’s study

- What is the system inertia foreseen by ENTSO-E in each of its scenarios?
- If the scenario are looking into the future, why don’t they take into account requirements from other codes (such as RfG)?
- How likely is a 60% imbalance in the power system to happen in the future? Why do we consider all imbalances levels with the same probability of occurrence? (Par. 6.2 states that small contingencies are much more probable)
- The current LFDD scheme seems to be fine (according to Par 6.1). Is the fine tuning really worth the cost?
- Several of the UFLS plans simulated do not seem realistic: the frequency step between each step (100 mHz) is very small. Current relays (in France) have an accuracy of 100 mhz.
- Why 30 mHz for relay accuracy? Which standard reference?
- Did the study only look at technical aspects or did ENTSO-E have also estimated the costs associated with the new requirements?
- Looking for an optimum should consider for technical constraints (and not only be theoretical)

## 3. New Market Interactions chapter

Drafting Team presented newly developed Market Interactions chapter, with the structure and the background of the concept.

### New structure for Market Interactions chapter:

1. Market Activities Suspension Triggers
2. Procedure for market activities suspension
3. Procedure for TSO processes suspension
4. Procedure for market activities and TSO processes restoration
5. Communication procedure
6. Settlement principles

### Market Interactions chapter Concept

- Market suspension and restoration arrangements are based per TSO
- Suspension
  - i. By using a Market Activities Suspension Trigger
  - ii. in consultation with market parties
  - iii. NRA approval foreseen
- Restoration when reasons for maintaining suspension are not valid any more
- Information exchanges to be clarified via Communications procedure
- Settlement as per NC EB; for situations with market suspensions, other arrangements per TSO are possible.

### Main concerns raised by stakeholders

- Stakeholders raised concern of market liquidity, which could also be an issue in certain cases, therefore sometimes it would be wiser not to prolong market closing for too long.
- The drafting team raised a question to the participants: in current draft, is the communication to all market parties ensured? E.g. not all BRPs/BSPs are member of a NEMO...How to make sure to inform all relevant parties?
- SSE representative stressed that the most important for market participants is when and how they receive information on market restoration.

### Eurelectric presentation with main concerns on the Market Interaction chapter

#### Amendment proposal for Market Suspension Triggers (in bold)

Approved by NRA **and harmonised at the level of the synchronous area**

**One or several** of following parameters can cause a Market Suspension:

- a percentage of Demand Disconnection in the LFC area of the TSO, **this percentage shall be related to the amount of load shedded in the first step of the Automatic Low Frequency Control Scheme according to Art.13** ;
- a percentage of generation disconnection in the LFC area of the TSO;

- a significant part of the LFC area in desynchronised operation with the rest of the LFC area of the TSO;
- a significant decrease of Cross Zonal capacities (**i.e. going below the sum of the monthly and yearly allocations**); or
- a percentage of Balancing Service Providers and/or Balance Responsible Parties not able to perform their market activities for reason(s) out of their control.
- **For all mentioned triggers, a waiting period of time is set to 1 hour to exclude all events lasting for less than 1 hour**

**Amendment proposal for Market restoration Triggers:** create Market restoration Triggers, similar to Market suspension Triggers:

Approved by NRA and harmonised at the level of the synchronous area

All following parameters have to be present for a Market Restoration :

- a percentage of Demand Disconnection in the LFC area of the TSO that shall be lower than the corresponding Market Activities Suspension Trigger under paragraph 3 of this article
- a percentage of generation disconnection in the LFC area of the TSO that shall be lower than the corresponding Market Activities Suspension Trigger under paragraph 3 of this article;
- a significant part of the LFC area in desynchronised operation with the rest of the synchronous area of the TSO that shall be lower than the corresponding Market Activities Suspension Trigger under paragraph 3 of this article;
- a significant decrease of Cross Zonal capacities that shall be lower than the corresponding Market Activities Suspension Trigger under paragraph 3 of this article; and
- a percentage of Balancing Service Providers and/or Balance Responsible Parties not able to perform their market activities for reason(s) out of their control that shall be lower than the corresponding Market Activities Suspension Trigger under paragraph 3 of this article.

**Amendment proposal for Communication procedure during Restoration** (in bold)

The procedure shall include at least following steps:

- Notification of the suspension of market activities by the TSO according to Article [3], including the best estimate for the time and date of the restoration;
- Update on the restoration process by TSOs;
- Notification by the NEMO(s) **and Market Participants** that their market tools and communication systems are operational;
- Notification of the restoration of the network back to Normal State by the TSO(s);
- Consultation by the TSO of the NEMO(s) and Market Participants on the proposed time and date for the return to normal market activities;
- **Approval by the NRA(s) of the proposed time and date for the restoration of Market Activities where practicable when the TSO(s) and Market Participants cannot agree**
- Notification by the TSO of the best estimate for time and date when market activities will be restored; and

- Confirmation by the TSO and NEMO(s) **and Market Participants** that market activities have been restored.

**The details of this procedure for restoration shall be defined by the TSO and the market participants and approved by the NRA.**

#### **Amendment proposal for Restoration procedure** (in bold)

Each TSO, in coordination with neighbouring TSOs, shall launch the restoration of suspended market activities when:

- the Market Activities **Restoration** Triggers are cumulatively met;
- Market Participants have been duly informed sufficiently in advance;
- tools and communication means necessary for TSOs, NEMOs and the percentage of Balancing Service Providers and/or Balance Responsible Parties as defined in Article 1(3)(e) to operate the activities are properly functioning; and
- significant amount of Cross Zonal Capacities can be made available to Market Participants.
- **When practicable, after approval of the NRA**

#### **Amendment proposal for Settlement principles**

The rules and principles shall address all settlements of TSOs with Balance Responsible Parties, Balance Services Providers and other TSOs.

**New section:** For the purpose of this settlement, TSOs shall act as settlement coordinator between generators and imports on the one hand and suppliers (or their respective balancing responsible parties) and exports on the other hand. The settlement shall be based on the meter readings and TSO's instructions during the Market Activities Suspension period. The detailed settlement rules, including the unit price for each period of time, has to be approved by the NRA. Upfront the TSOs and generators shall agree on a price formula for the energy injected in the affected networks. The DSOs shall provide their best estimates to allocate the consumed energy during the Market Activities Suspension period to each supplier.

Each NRA shall ensure the financial neutrality of all TSOs under its competence with regard to the financial outcome as a result of the settlement pursuant to this paragraph, over the regulatory grid access tariffs period as defined by the relevant NRA.

**Each NRA shall determine the deadlines of provisional settlement and final settlement.**

#### **Drafting team concern on the settlement principles**

Assigning to the TSO, in the Network Code, the role of “settlement coordinator” may not suit every possible situations and organisations. This task should be assigned at national level, to ensure consistency with the organisation in “normal” situations. TSOs have the best visibility from the operational point of view, but this is not a sufficient reason to perform this task. Other organisational, skill and responsibility matters have to be taken into account.

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## NEXT STEPS

Next Public Workshop on NC ER will be organised on 12 Feb in Brussels. The aim of the Workshop is to present results from two public consultations and the new NC ER draft.

Convener of the drafting team for Emergency and Restoration, Laurent Lamy, expressed gratitude for participation, valuable discussions and contributions. Stakeholders are again invited to put comments in the ENTSO-E consultation tool by 14 Jan 2015.