

## 2<sup>nd</sup> ENTSO-E Stakeholders Workshop on Load-Frequency Control & Reserves Network Code (LFC&R NC)

### Minutes

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#### Participants:

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## Agenda:

N°	Subject	Action	Who
1.	Welcome		Olivier Bronckart
2.	Presentation on the last developments at drafting the LFC&R NC	Presentation	Pavel Zolotarev, Jan Voet, David Whitley
3.	Questions & remarks of the Stakeholders	Discussion	All
4.	Conclusions		Frank Reyer

### 1. Welcome

Olivier welcomes the participants and Anne de Geeter who is connected by teleconference. Frank presents the agenda of the Workshop. He underlines that the last Workshop in July was dedicated to determine the scope of the LFC&R NC. Today, the participants will be asked to go more in detail and to discuss the articles which are the most critical for them. He also asks the stakeholders to make firm proposals wherever possible.

Frank says that the Significant Grid User compliance is not clear in the draft, because the term Significant Grid User is not used in the code at all. The DT will need to make up its mind in relation to the use of this term in the code. Should it not be used, it will be deleted.

### 2. Presentation on the last developments at drafting the LFC&R NC

Pavel, Andreas and Olivier showed a presentation the LFC&R NC DT prepared for the Workshop. The presentation contains the following chapters: frequency quality, load-frequency control structure, frequency containment reserves, frequency restoration reserves, cross-border exchange and sharing of reserves, cooperation with DSOs, and synchronous time control. The presentation will be published on the ENTSO-E webpage.

Discussion:

Question related to use of frequency target parameters to define processes and how the DT is going to evaluate them. Answer: Target values will be determined at the level of synchronous area and the processes on the basis of statistical data. Question: Will there be a consultation process. Answer: regulators will be involved. Suggestion: We insist that a consultation process should be included in the code.

Suggestion: Providers are not the same as market parties. This needs to be differentiated in the code.

Question: This code allows TSO to trade reserves. Does this mean that transmission capacity will be reserved for that? Answer: Depending on the market design, if this capacity needs to be secured weeks in advance, then the transmission capacity will have to be reserved. In short term, however, TSOs will use the available capacity. Question: It is mentioned in the code that transmission capacity must be allocated. Who has the right to first call of capacity? Answer: If the market outcome is that the TSO can't use transmission capacity, then the arrangements between TSOs won't be executed.

Question: Why the code refers to FCR, FRR and RR and also to imbalance netting? Isn't it the Balancing code to define the netting? Answer: the LFC&R NC only opens the capability for netting, nothing more.

Question: What is the concept of Market Balance Area? Isn't it the Bidding Area? Answer: In the hierarchy of control the minimum is to know the schedule (which is already used in other codes). An example is Italy. In the Nordic area there are Market Balance Areas too. This enables to deal with congestions inside control areas. Observation: There are different definitions of "Control Area" in different codes. Answer: The LFC&R NC is the master code for defining the term "Control Area". Suggestion: It is better to use "Frequency Control Area" in the LFC&R NC. Answer: The problem is that some codes are already closed and we can't interfere with them. From the legal point of view every code is a single document and only the definition specified in that code are relevant for it.

Observations: Minimum frequency measurements: 1 mHz is far beyond the state of the art. Insensitivity of frequency measurements as of 10 mHz opens a band as of 10 – 30 mHz. Why is full activation time not consistent with final report of AhT Operational Reserves? Answer: In the code we define what is absolutely necessary. The report is a general technical paper. It doesn't need to be fully reflected in the code.

Question: FCR - where the method for reference incident is described? Why there are not figures in the code? Answer: The reference incident is individual per synchronous area: e.g. the outage of the largest power plant. However, if this plant is shut down, the figures will change. Question: In such a case you may ask the regulators to change the figure. Observation: The method for reference incident should be explained. Answer: It will be done in the explanatory document.

Question: Do you mean that the requirements define a providing unit or the whole power plant which has e.g. four units? Answer: We apply the concept of pooling and the pools provide reserves. Question: What about large units? Answer: In such a case pooling is not necessary. A single unit can provide reserves.

Question: Will FCR become a commercial product when this code is in force? Answer: We are setting requirements on providers. If in a certain country the providers have an obligation to provide, they will fulfil the requirements more or less automatically. Question: What happens if I provide FCR for Italy by my unit in the Netherlands? Will there be frequency oscillations? Answer: We have calculated the distribution of FCR and concluded that it doesn't lead to oscillations. The exchange of FCR will be limited to some extent according to the rules set forth in the NC.

Question: FCR - there are two approaches in Europe: mandatory and market. This creates a different situation for participants. Answer: This is out of scope of the LFC&R NC. This issue will be possibly tackled in the Balancing code.

Question: FCR - in the sense of pooling, I am obliged to replace let's say 1000 MW of LFC within 12 hours? Answer: The current wording implies that there will be different models to ensure this.

This is a question of market design for the respective products. Suggestion: Move this obligation out of the LFC&R NC. Answer: This is not an obligation for the power plants. It is an obligation for TSO to take care to replace FCR and will be done differently in different countries. Observation: The Balancing code is about procurement of reserves, whereas the LFC&R NC is about definition and determination of reserves.

Observation: FCR - the characteristic of activation is never linear. It should be described as monotonically linear. Answer: It is true inside a power plant, but we would like the providers (i.e. seen from outside) to deliver linear activation.

Question related to FCR monitoring: What is meant in paragraphs 8 and 11 of article 22: Singular or plural? Answer: This is a requirement for the owner of the providing unit. Observation: This will put a burden of additional costs on the provider. In the Netherlands this is not necessary, because the units already have the obligation to deliver FCR.

Observation: If more inertia in the system is needed, it has to be procured. Answer: We will make a cross-check as to how this is specified in the operational codes.

Question: FRR Quality - you say that you need a target. I have not seen a target in the code. What is the target and what is the method for its calculation? Is the "trumpet curve" an example? Answer: The trumpet curve refers to the frequency. We have two pillars of FRR dimensioning: dimensioning incident (largest imbalance in the control block) and frequency restoration quality target which is not related to the dimensioning incident. This target means that at restoring the frequency a certain value should not be surpassed. Examples will be given in the explanatory document. Suggestion: You should publish real-time what the targets are so as it can be checked that TSOs comply and fulfil their tasks.

Question: FRR - what are the additional requirements of Reserve Connecting TSO? Answer: The certification process will be harmonized, but TSO still may have some less important specific requirements. Question: Can this be related to the ramp rate? Answer: You imply that having different activation times for FRR will deteriorate frequency. The stipulations in the LFC&R NC will already enable good frequency quality. If a TSO requires faster reaction of FRR, the frequency will only be better.

Question: Framework Guidelines require that NCs respect interaction in the balancing intra-day market. There is no such a process in the LFC&R NC (activation processes of RR). Answer: We didn't touch RR too much, because we can run our systems without RR (there is no technical need for RR or for balancing markets – they are only opportunities). Observation: The Balancing code should specify how RR is activated. Answer: The good news is that we have no severe technical limitations to these processes.

Question: Why 100 MW is defined as minimum for FCR exchange. Answer: This is meant for small TSOs, because this flexibility won't influence the security of operation. This allows e.g. the Netherlands to have 100 MW more and export or to have almost zero MW and import. Question: How do I know that my capacity is being exchanged? Answer: If it is a contract between TSOs, then the TSOs know. If it is a deal between TSO and provider, then the provider knows. Suggestion: To include corresponding requirements from the Operation Handbook.

Question: I am allowed to provide FCR to one TSO and FRR to another. Answer: Yes.

Question: And what if a TSO puts higher requirements on its reserve providing units and trade the former with other TSOs? Answer: We all share the vision for the common market, also for reserves. This kind of behaviour will be prevented, but that is not the task of LFC&R NC which only contains technical requirements.

Question: Sharing of reserves means not exclusive access. Does the receiving TSO have exclusive access? Answer: No, it is full sharing of reserves, a cooperation between two control blocks. In many countries normal FRR would be only 300 MW, whereas the dimensioning incident is as of 1000 MW. Sharing of FRR enables these countries to use reserves in an efficient way, because the dimensioning incident is extremely rare.

Question: Will the information on the amount of reserve exchanges be published real-time including the amount of transmission capacity which will be “sterilized” for this purpose. Answer: We don’t see a problem with publishing. We will consider your proposal. The transmission capacity used for any purpose including that of sharing of reserves is dealt with in other codes.

Question to rights the DSO may impose on Reserve Providing Units: How can I contract with a TSO if another party has the right to change the conditions under which I participate in the market? Answer: If the TSO and Reserve Providing Units envisage such a possibility, it should be taken into account in the contract.

Remark: EDF expect to suppress the Synchronous Time Control.

### **3. Questions & remarks of the Stakeholders**

Remark: In Article 11.3 the market is involved, although the LFC&R NC tries to be only a technical code. The same can be observed in article 14. Answer: This is a kind of exit clause. We have a problem with high frequency deviation at the change of hour. Question: You are writing the rules. You have the power. Why do you want to change the market design afterwards? Answer: For the next version of the code we will prepare an approval process, and decide which stipulation will be submitted to it. Observation: You have made proposals how to deal with frequency deviation. Answer: The fact whether the settlement process is on hourly or 15 minutes basis is not part of any code, not even of CA&CM NC, because the latter is only related to the transmission capacity that will be given to the market (i.e. not to settlement). Suggestion: You should feel free to implement your proposals in your code. Answer: We will consult our legal section.

Comment: Put in the end of each chapter the information which TSOs will have to publish.

Question: Value for activation of primary control +/-20 mHz. The insensitivity of the controllers is, however, 10 mHz. Answer: One insensitivity id for measurements and the other for controllers. The total is 20 mHz.

Remark: In case of smart grids, the requirements for FCR should be less strict.

Remark: If you use exchange of reserves for 24 hours, you will block the transmission capacity during the same period of time. Answer: We have small deviation, but longer lasting. In that case, blocking the transmission capacity is not relevant.

Question: Page 22: A TSO of control area needs to “make best effort to...” This needs to be changed. Answer: This is a usual legal formulation, nothing else.

Couple of questions related to article 3...: "Assignment to the real nature of cost". Please send us your comments in written.

Remark to article 3.1: If is not proven that organizing FRR in control areas is optimal, because the control areas are of different size, we should use the code as an opportunity to go further. Answer: This too needs to be checked from the legal point of view. The LFC&R NC describes technical requirements in a framework which is open for many new developments and sets incentives for control areas to cooperate. It would be challenging to propose something different from scratch.

Question to LFC structure: In Policy 1 of the Operation Handbook it is stated that sub-control areas in the so called hierarchical structure are possible. Is that possible also in the LFC&R NC? Answer: Yes. Question: In Spain we have generating areas with ACE specifications.

Remark: In Article 23.5 it is specified that control block can have a full activation time of FRR shorter then for synchronous area. That is not necessary.

Remark: Article 23: Elevated and high risk levels are different for different synchronous areas.

Question: Do you use 1 minute average as criterion (article 23)? Answer: This is related to online functioning of the system. This is not a criterion.

Question: Article 13, paragraph 7. Answer: We put obligation on control block level as to the size of a control block.

Question: Does anything in the LFC&R NC makes FCR, FRR or RR mandatory? Answer: We have the responsibility for the processes. Each TSO has to organize the provision of the reserves. There are no obligations on generators to provide the reserves.

Question: FG on Balancing: Common merit order. Answer: Exchange of reserves is related to geographical distribution of reserves. The common merit order list is related to the use of the reserves in terms of economic optimization once the geographical distribution is given.

Question: Is it possible to put up a company and trade reserves from one country to another? Answer: In principle yes.

Question: What are small synchronous areas? Answer: This is one of the missing definitions.

Article 13.1, second sentence: Who is doing this definition? Answer: TSOs of a synchronous area shall cooperate. This shall be done by TSOs.

Article 30 and 31: Huge cost implications are possible due to DSOs and TSOs requiring continuous testing. This part of the code needs careful reformulation.

#### **4. Conclusions**

Frank reminds that the public consultation will take place in February/March 2012. Till then, stakeholders may send additional proposal by mail. This should be done as soon as possible, because the code will soon be finalised.

Frank thanks the participants for their questions, remarks, observations and comments, and closes the Workshop.