MINUTES of Stakeholder Workshop

On Load Frequency Reserves and Control Network Code held on 12th March 2013

at ENTSO-E premises Avenue de Cortenberg 100, Brussels.

Mark Copley gave a welcome, and outlined that the Network Code on Load, Frequency Control and Reserves is an important code, which links operations, market and connections. The purposes of the workshop are for the stakeholders to ask questions and focus on the important areas.

Frank Reyer gave an introduction and outline to the day, with a summary of the document structure. Articles 1 to 7 and transparency were not covered by the presentations to be given.

Members of the drafting team gave a presentation which was divided into topics throughout the day.

**Question**

Clarity was required regarding reserve providing group. Is it right to assume that an aggregated unit is one group? (reply - yes). Would a consumer DSR use an aggregator? (reply - yes). The definition requires clarification in the code.

**Statement**

In article 3.3 regarding regulatory approval there is too much detail which is not passed to stakeholders especially NRAs. A section on TSO compliance is requested.

(Reply –article 3.3 aims to ensure decisions are in a non- discriminatory way. Article 3.3 is meant to be non-proportional.)

**Statement**

There is a general issue regarding the general principles in the codes. NC Operational Security (OS) uses the NC CACM methodology. There needs to be the same approach across all the codes. As a general principle all codes are children of the regulations, the sub-objectives of the individual codes are not needed. Why not apply the CACM solution as in OS?

(Reply - the OS version was written after this was published, and this code has an older version of text. The code will have the same clause in all the codes).

There are conflicts between article 3.3 and 4.3. The latest version of RFG terminology needs to feed into the codes

There needs to be a different capacity definition. The use of virtual tie line conflicts with CACM (reply – this needs to change to ATC, this needs more relationship with the physics).

Article 3 is very important as many articles refer to this.

Some definitions are missing; for example there are some words which are capitalised.

ATC needs to change to available physical capacity.

Virtual tie line, what does this mean?

What does set point value mean?

(reply- comments noted ).

**Statement**

Article 5.3 requires consent in law under 5.2. It compels the provision of information under the network code for secondary purposes.

Article 1.2 requires the efficient use of power system and resources. It is not up to TSOs.

One set of states – need to use OS definition. For the definition of RR, what are definitions to achieve. The definition of RR needs to be tighter.

(Reply - Products are not defined. Only processes are in this code, time spans are not defined).

**Question**

The use of virtual tie line, those that give preference for cross border transfers before the market. Is this in line with the other codes such as CACM etc. (reply – this code is a technical solution for cross border exchange of reserves. This code is about the Exchange of reserves not energy. It was clarified that it needs to be used for ACE, location of reserves, and communication signals.)

**Statement**

Clarification is required on exchange.

Article 4 on cost recovery. Other parties such as DSOs have to bear costs in the code. There needs to be recovery of costs. There needs to be cost recovery for generators for time control.

There was a debate on the use of the wording best endeavours. Best endeavours is a legal term and means every possible means has to be used to meet a requirement.

**A presentation by EFET was made on the commercial and economic significance**.

The themes from the presentation were:

-There must be justification of the numbers.

-Optimisation: what are the principles, criteria, article 3(1+2) who does it apply to?

-Strange to reference national legislation in the Network Code.

-TSO multi-party agreement needs to be brought into line with CACM.

-CACM has price zones, there is a different set of zones in LFC&R, how do they fit together?

-Why is there a difference between GB, IRE and other synchronous areas?

-Not comfortable with article 15.

-Some requirements should be defined in the emergency code and should not be here.

-There is a lack of clarity on the potential actions that can be taken.

-Cross border exchange should be in the balancing code. Cross border reserve should be as a “sell” to the local TSO or neighbouring TSO it should not be TSO to TSO.

**Question**

Regarding the use of cross border reserves (reply – this will be left to the Electricity Balancing target model. The LFC&R network code is only a technical framework).

**Statement**

Clarification is needed on the wording that only “TSOs have the right”.

Issues on TSO multiparty agreements.

There need to be some framework if TSOs do not observe the code.

TSO-TSO exchange. This needs to use a market solution or have NRA approval.

**Statement**

There is a TSO-TSO target model with a common merit order, this does not appear to be in this code, but it should be clear in this code. In the code there are both models, but TSOs do not sell reserves to other TSOs, the code does not refer to products, it does not refer to the target model, but sets technical capabilities.

**Statement**

On compliance: TSO indicators need to be published indicators for compliance and transparency. Is the Compliance to be published as it is Information on TSO actions? Definitions of processes are so broad. This should fit as a product. Compliance is a general issue.

There needs to be transparency, with the products, procedures are needed on how and when. (Reply – on Transparency, a lot of work has already been done. Regarding compliance, each article says TSO shall. What could be added? Activation needs to have when and why it is done by a TSO.)

**Question**

Three types of reserve, are these the only ones allowed? (Reply - definition of FCR, FRR and RR processes are very broad to include everything).

**Statement**

General Issue with definitions in the balancing code and LFC&R with respect to demand response especially as terms are not defined.

**Question**

Regarding the use of droop settings, and how are DSR meant to comply. (Reply – this will be clarified for the next issue).

**Statement**

There should be a requirement in the code for a compliance penalty for TSOs with NRA approval.

**Statement**

In the Balancing code enabling demand response is not defined. The definitions are often lacking. In addition there is nothing to say that a TSO has enabled demand response (reply –the code enables demand response, more explanation may be required).

**A presentation by DSO Expert Group was made.**

**Question**

Is it the intention that DSOs can block distribution connected providers? There needs to be NRA involvement. General blocking should not be in the code. It needs to be defined when blocking can take place e.g. in article 28.2. (Reply - aware need to clarify more in 28.2).

Article 52.3 asks for information. In article 52.1 only if figures change. It should be written that data information should only be sent if there has been a change. There needs to be some proportionality.

**Statement**

The code needs to clarify that in real time data exchange is not on domestic demand.

**Question**

Why is frequency rate of change not a quality parameter. Will it be in document later? (reply – there is no need for frequency rate of change as it is within the deterministic calculation of frequency quality definition).

There is a requirement to state what happens if frequency is outside the steady state. The instantaneous steady state should be used as an indicator (reply - Article 8 needs rewording. Wording needs to be changed not the parameters. The comments will be taken into consideration. The effects of DSR on system frequency control are not done in FCR, FRR, or RR. The effect of demand behaviour on frequency is different as demand changes. There is a need to change the propositions to NRAs).

**Question**

Deterministic frequency deviation, how does this work in the code (reply- We have not distinguished the reasons only looked at frequency itself).

The tables need to have all the frequency parameters, why are some missing (reply – the target parameters are fixed and the other parameters are analysed and may be changed).

**Statement**

There is duplication in table of time to restore frequency (reply – this is for recovery and restoration purposes).

**Question**

Definitions of frequency, DCC code mandatory participation of temperature control devices, here TSO can change parameters, how will these work? (reply - have to change the words, parameters may change over time).

**Statement**

Limits on Quality criteria limits- what do they mean? Solutions to better behaviour of LFC&R and Synchronous Areas. The wording regarding quality in the LFC Area\Block and synchronous area needs to be clarified. There needs to be changes to take account of the sources of imbalances and ways to address the issue. This has to involve all stakeholders and NRAs. There was a suggestion to revise targets. The issue is that mitigation measures are on users not TSOs. NRAs as well as TSOs define the target. Too much power is given to the TSOs to set targets when TSOs rely on users to achieve targets. NRA Consultation and approval needs to be explicitly described.

There is an issue with TSOs being able to set parameters and then change targets themselves without stakeholder consultation and input.

Article 4 is too general. There needs to be regulatory approval included in the article.

**Question**

What is meant by behaviour of the providers or change of market/ancillary service (reply -Common frequency quality is a common good. These are results which improve LFC frequency. It may be necessary to change the words. The source of imbalances have to be found and measures taken to improve the frequency. This has to be addressed and TSOs have to take the lead

**Question**

Additional solutions, check if the calculations of targets would need to be revised (reply – the idea is not to revise the targets, but that quality should not decrease from now).

**Statement**

Users have not been consulted on frequency quality. There is a requirement for manufacturers to know the frequency occurrences per year. Plant is designed to operate with a given frequency quality which should not change over time as plant needs stable figures. Article9(4) is unacceptable. This is a small minimum set of parameters, it has been said before this list is not enough and must include standard deviation of frequency (reply - standard frequency range is not equivalent to 2sigma. This is not to say that standard deviation is not taken into account).

In buying a turbine bidders give ranges of frequency and voltage U/F combined diagram with max times in the zones and max number of times that it can occur. The code is not in line with this, this has been repeated many times. How can a user take all the risk without knowing the number of occurrences (reply – RfG covers the entire frequency range including emergency ranges and the generator capabilities needed to cover that range)

**Statement**

Clarification is required in future codes such as emergency to cover black out conditions.

Stakeholders have an issue with the wording in Article15 which give the TSO powers to limit ramp rates on existing generators for frequency quality.

**Question**

In Continental Europe how will the change from ±50mHz to ±100Hz effect users. (reply - it will not affect the products). The Table of ranges in the code compared to RfG, and the Article allowing the ability to change is not acceptable (reply –the drafting team are aware that this is too open and will include NRA approval).

For Frequency quality parameters, users were not consulted to get the relevant ones. It is known about the frequency of the occurrence of frequency events, what is the 15000 minutes? (reply – this is a frequency quality indicator that is for the TSO to monitor and is not on users. It would be good to have a proposal and justify why these numbers are not enough, and to propose new ones. Currently 15000 minutes from the 1-minute average, if average over ±50 mHz it counts as one minute.)

**Question**

Article 15, can be changed without cost benefit analysis in LFC&R. For current units and not prospective units if it is applied retrospectively, in RfG you have to have a cost benefit analysis. (reply changes to the wording will be considered).

**Statement**

Frequency quality affects existing users (nuclear power plants) if frequency quality degrades all safety will become obsolete, and there must be stability over time, individual users fulfil their requirements, TSO must therefore fulfil their requirements.

**Question**

Query on the cross border exchange (Reply – allowed, further work will elaborate on balance area/control block).

**Statement**

Sharing and exchange: It needs to be consistent across code in the way the giving and receiving TSO is described in sharing, and exchange. It is currently different. Article 37.5 is confusing with article 38.5 for market providers especially differences.

Limits on exchange of reserves need to be clearer.

Article 24 activation process – two articles are the same. Clarification is required on the fall back mechanism. For example TSO obligations if the tie lines fail.

Art 32 – 5c, all providers are required to meet it even though they may not participate in the market. There is no regulatory oversight to this (reply – some of these provisions may be in the Emergency code).

DCC mandatory requirements need to be reviewed. They may be a need for a transitional period.

Article 29.4 – volume requirements to be defined as a small group. It depends on who is connected. There needs to be investigation on the order of magnitude. The size needs to be defined. The requirements on the provider need to be clear. There are concerns for length of time that renewables are able to provide FCR. The continuous availability requirement is too onerous.

The drafting team need to consider a link with RfGNC. This is both for current and future generators. There is a need to clarify aggregator as a control point.

Request to look at Article 31.1.c.

The code needs to describe in greater detail when units have different types of response on the same unit.

**Statement**

Double measuring and inconsistency, OS 3MW and LFC&R 1MW.

Article 31(3) how to qualify or where aggregation takes place.

At start specific to units.

Not clear how group requirements are met.

Article 32 synchronous area risk level, OS NC system states are different, OS and LFC&R need to be consistent.

**Statement**

Revision on Article 31.a,b,c is required. E.g. set point from TSO. Queries were also raised regarding requirements in different Synchronous Areas and on real time measurements.

Article 31 regarding minimum technical requirements Conflicts with Synchronous Area/LFC Area/Block and reserve connecting TSO.

Current reserve provider cannot deliver signals. New items based on costs. These need to be recovered.

Need to consider consistency for a harmonized approach that is consistent with real time measurements outlined in the Operational Security code. It needs to be consistent for those that pass through DSOs.

Article 31.3 is unclear regarding aggregation and qualification.

Art 32 Synchronous Area risk level, Operational Security system states. Article 9 for each TSO needs to be consistent with Operational Security NC.

**Question**

Why is RR different (Reply - This is due to the time span requirement for RR. There are technical reasons for the requirement differences with for RR and FRR).

**Statement**

Article 34.3 refers to FRR instead of RR. RR provider and providing unit need to be clearer.

Article 52.3 TSO giving or receiver on a provider is contradictory.

Article 33.5 market relies on the level of market liquidity.

Article 37.1: there is an issue with service providers due to the different rules in place. There is a need to look at provider requirements.

Article 37.2 is sufficient cross border capacity to be allowed?

The supporting paper needs to outline the interaction of this code with the RfG network code. TSOs procure an amount of FCR. In continental Europe the relevance of 200 mHz needs to be explained. The function of limited frequency mode is not described here especially how it is procured. (Reply - Article 28. Defines FCR requirement for normal operation not for the emergency level).

RfG & DCC cover the complete range including normal operation and emergency conditions. This code covers normal operation. This range needs to be clarified e.g. emergency to be excluded from this code. RfG needs to cover the complete range and there is a need to explain how they work together.

Article 28.7 should not be in this code as it is covered by RfG requirements, unclear. The article needs to be clear for the other Synchronous Areas. For single providers the use of droop for controllers needs to be defined properly and another method used for load response .

RR full activation time should be covered in the code.

The code needs to determine distribution of reserves. (Reply - Dimensioning covers processes, the distribution limits the exchange)

Exchanging of FRR and RR should be sent to NRAs and markets. (reply – this will be in a transparency chapter).

Do TSOs have the ability to exchange (reply - A Limit is kept within the block so there are limits on the export and a need to control the imbalance. This is for technical issues such as rotor angle stability.)

 Is it possible to have more FRR than dimensioned? (reply - rules are only for the amount needed to control the system. Additional rules for more than the requirement do not apply.)

**Statement**

Regarding the article 37.6 limit on exchange and sharing of FRR. If there is a restriction on the receiving TSO contract there is a restriction on the market player. If a provider cannot sell across network, TSOs should not be able to if a provider cannot.

The Code should be clear regarding TSO-TSO reserve and should be based on the Common Grid Model.

Where in the framework guideline is sharing?

**Question**

In the article regarding sharing it is not clear whether the requirements are on the giving or receiving TSO and that capacity must be available.

(Reply –for available reserve capacity there is a link with the balancing code. The cross border activation process is in chapter2. Reserve optimisation is covered by the balancing code. Technical requirements are in LFR&C e.g. the amount required for dimensioning. There is a requirement for a TSO to keep sufficient enough reserves to control their own system. Clarification is required compared to the requirements of the Balancing Code.)

**Question**

Where is volume and distribution of reserves covered (reply - the process gives the volumes, the limits will ensure all reserves will not be in one location).

The process in the network code what will the amounts be (reply - Amount of reserve will depend on previous imbalances real-time is more about energy, reserve is more about capacity).

**Question**

Is there an obligation on TSOs to exchange or share (reply - LFC&R defines rules to operate the grid safely the details will be in balancing. The code is providing a tool box to deal with problems).

Are there no limits on export of FRR? (reply - FRR limit on amount within block, FCR rules for export and import).

In Article 39 table Supplementary FRR has no limits what does this mean?(reply - if you have a lot of FRR bids, we only cover the amount required to control the system).

Article 37(6) ability to limit is already defined here (reply - this is a more detailed article if a LFC block needs to keep more FRR within its border).

FCR, FRR and RR - If a TSO provider has no spare then it cannot trade. If a provider cannot sell their FCR, FRR and RR then a TSO should not (reply - this is a market decision, and a process implementation issue, looks at security limits)

**Statement**

There has to be a level playing field. i.e. a TSO cannot compel a provider to provide to a TSO and then sell the reserve on to another TSO.

It is not clear on the TSO-TSO model and the link with the common merit order. The Balancing code does not describe this, it should be in LFC&R NC.

**Question**

Where in FWGL does it describe sharing of reserves? ACER reply - Even if it is not in the FWGL it goes towards improving efficiency.

**Statement**

Cross border reservation could be included in the price, it is a market issue. ( reply cost benefit analysis is required to analyse if reservation required).

**Question**

Both TSOs could share the same reserves, the code needs to clarify receiving and connecting TSO, there is potential for two receiving TSOs, both to reserve capacity implying 100 becomes 200(reply - text must not be ambiguous).

**Question**

Areas need to be coherent with bidding zones. Areas may be flexible. If you share between two areas why not join the two areas (reply - In the long term it may move to larger areas, currently it is to allow efficiencies).

Why wait (reply -the bigger the block the less the reserve you have).

**Statement**

Available capacity should be clarified that it is not being reserved by the TSOs.

One market may provide during the day, another providing during the night, or on an hourly basis this is not clear in the code.

Chapter 2 has cross border activation and this will be defined in balancing NC, where is the technical element? (reply – cross border activation process . The Reserve requesting TSO indicates to the connecting TSO, transfers some of its imbalance to connecting TSO, who takes responsibility of the imbalance to its system).

**Statement**

Synchronous area agreement. This needs more detail on what it is.

Article 50 and 54, have many caveats for TSOs, an article for transparency to inform stakeholders is required.

Article 34 & 35 operation of RR is missing in the article.

Look at what is the ideal because these codes will take a long time, think now about larger blocks and the transition, more ambition is needed in the code.

**Statement**

In the Synchronous Area agreement for cross border exchange between TSO-TSO the NRA must be informed of, volume, price, counterparty. This could be in Article 38.6.

In article 50 there are too many caveats, so reserve will not be activated. Transparency is needed in the articles.

**Concluding remarks**

Mark Copley indicated drafting team members will take on comments, and these will feed into the way the code improves. The Consultation tool is open for comments. These will be assessed and a new version issued at the end of April. The next stakeholder workshop will be in May.

There was a request for a summary of Stakeholder Major Concerns and of the required focus:

FCR, FRR and RR providers, one clear chapter that sets out what the provider has to do

Article 15 mitigation

Link between RfG and LFC&R with reference to emergency and balancing code

Table in support document setting out requirements for each of FCR, FRR and RR

Review article 50, and the link between Balancing Code and LFC&R. Article 50, demand side clarified. Bidding zone etc needs to be clarified.

Impact of the emergency code.

In the supporting document some FCR response time real values based in this code are required

The operation of RR is missing as in articles 34 and 35.

There needs to be a review of the codes to see what is ideal. A Roadmap for the future evolution is required with the transition clearly outlined.

 Review of the use of zones and sharing

The code needs to be clearer regarding the use of aggregators.

Need to clarify the formulation, framework for TSOs and NRA approval.