

## 7<sup>th</sup> System Operation European Stakeholder Committee (SO ESC) Meeting

Friday, 14 December 2018 from 09:00 to 13:00

ENTSO-E, Avenue de Cortenbergh 100, Brussels, Belgium

### Draft Minutes

Participants			
Uros	GABRIJEL	ACER	Chair
Jakub	FIJALKOWSKI	ACER/E-Control	
Marco Savino	PASQUADIBISCEGLIE	ARERA	
Maria-Eugenia	LEOZ-MARTIN-CASALLO	European Commission	
Blanca	ANRES ORDAX	European Commission	
Jean-Philippe	PAUL	ENTSO-E	
Knud	JOHANSEN	ENTSO-E	
Rafal	KUCZYNSKI	ENTSO-E	
Eduardo	LORENZO	ENTSO-E	Via phone
Sonya	TWOHIG	ENTSO-E	
Cesar	CLAUSE	ENTSO-E	Via webstreaming
Kristel	ROMEO	ENTSO-E	
Stela	NENOVA	ENTSO-E	
Luca	ORTOLANO	ENTSO-E	Via phone
Jacques	WARICHET	ENTSO-E	
Tahir	KAPETANOVIC	ENTSO-E	Via webstreaming
Luca	GUENZI	EUTurbines	
Michael	WILCH	EDSO for Smart Grids	
Eric	DEKINDEREN	VGB Powertech	
Klaus	OBERHAUSER	VGB Powertech	
Adolfo	LOPEZ TEJIDO	EURELECTRIC	
Stein	OVSTEBO	IFIEC	
Marc	MALBRANCKE	CEDEC	
Florentien	BENEDICT	CEDEC	
Brittney	BECKER-ELZAREI	EASE	
Matteo	MORASCHI	EASE	
Pavla	ERHARTOVA	Europex	
Srinivasa	RAJU ADDALA	EUGINE	
Naomi	CHEVILLARD	SPE	webstreaming
Toma	MIKALAUŠKAITE	Orgalime	Via Webstreaming

### **1. Opening**

#### **1.1 Welcoming Address and Draft Agenda**

The Chair, Uros Gaboriel (ACER), welcomes the participants to the 7<sup>th</sup> SO ESC meeting. The draft agenda is approved, with a request for AOB by VGB.

#### **1.2. Review and approval of the minutes from previous meeting**

The minutes of the 6<sup>th</sup> SO ESC meeting are approved without further comments (available [here](#)).

#### **1.3. Follow-up actions from previous meeting (slides available [here](#))**

1. The answers to the questions raised by VGB at the 4<sup>th</sup> SO ESC meeting regarding interpretation of certain articles in the SO GLs and NCs have been uploaded on the ENTSO-E website for the ESC meeting.

2. SOGL: ENTSO-E is invited to provide visibility regarding the numbers and the approaches taken regarding the implementation of the LFC block operational agreements and reserve sizing, for example regarding the probabilistic approaches applied in different areas and how those compare to each other. ENTSO-E notes that this is linked to national implementation without request for harmonization and can provide a central access to links to national agreements. The chair notes the collection of links is perhaps ENTSO-E's first step in the performing its monitoring duties in accordance with the Electricity Regulation. However, ENTSO-E should further provide visibility and transparency on the approaches taken by TSOs, this is to include information on: the actual percentage in terms of amount of time in which imbalance has to be covered (157.2h and i); results of the probabilistic methodology; the size of dimensioning incident; the resulting FRR capacity; the split of FRR capacity between mFRR and aFRR, per MS/control block. The chair invites ENTSO-E to follow its approach in the monitoring of the implementation of the CNCs where an excel table for the banding values was provided by ENTSO-E and the TSOs were asked to provide the necessary information, including explanations where necessary. ENTSO-E and ACER will discuss the timeline for the implementation of this proposal. **The item will be left open for further discussion.**

3. ER: ENTSO-E is looking into the possibility to organize a workshop for further discussion on aspects to allow NEMOs and other stakeholders regarding the development of the rules for suspension and restoration of market activities.

4. ER: ENTSO-E should check with satellite communication providers to find out if there are enough simultaneous connections available in case of a general blackout in Europe. The topic is covered under agenda item 2.

5. ER: ENTSO-E should provide TSOs with the means to publish their proposals for terms and conditions of the NC ER at the EU level in order to facilitate transparency obligations pursuant to Article 7 of NC ER. The national proposals are generally published on the TSO websites, and where ENTSO-E is collecting information regarding the national proposals, the links are made available on the ENTSO-E website.

6. and 7. ER - Defence and Restoration plans: the TSO workshop regarding ER defence plans did not take place. ENTSO-E is looking into organizing a workshop for the exchange of experiences and examples from different Member States' national implementation processes, currently foreseen to take place in April/May 2019. ESC members propose it may be more beneficial to host the stakeholder workshop on ER earlier than April as there is a need for a lot of discussions both at national level and between MS, regarding also action 11. **ENTSO-E will look into the possibility to organize the workshop earlier in time to allow exchange of experience, if possible.**

8. ER - Defence and Restoration plans: ENTSO-E will look at which measures from the defence and restoration plans can be made publicly available and provide transparency on those. Generally, system defense and restoration plans cannot be made publicly available for security and confidentiality reasons. The TSOs have consulted stakeholders to prepare the plans and depending on the national policies, some of those plans could be made publicly available.

9. ENTSO-E should collect information regarding SOGL and NC ER implementation and ensure transparency through the Active Library and the monitoring file. ENTSO-E has looked into all obligations regarding the national proposals, and they are made available on the website and through NC app, even if they are TSO only proposals. ENTSO-E and ACER will look together into what additional proposals should be further made available on the website or through the Active Library and seek further stakeholder feedback regarding the transparency. The item should be kept open and subject to further discussion regarding the status at the next ESC after initial assessment of the information and content available on the website.

10. Future discussions on the topic of market suspension and ER will be taking place in the MESC. The SO ESC will be kept informed of the relevant discussions.

11. The ESC will be kept informed of the results of the discussions on ER aspects under the TSO-DSO NC implementation working group. The topic will be included in the SO ESC agenda when relevant.

12. Meeting dates for 2019 have been approved at the joint SO-GC ESC meeting on 13 December 2018.

#### **1.4 Terms of Reference of the SO ESC**

The Chair informs the ESC about the proposed changes to the ToR, mainly those related to the possibility to establish EGs as in the GC ESC ToR and those explaining stakeholders' responsibilities concerning the submission of meeting materials, i.e. 5 working days in advance of the meeting.

The Terms of Reference of the SO ESC are approved as amended (available [here](#)).

#### **2. NC Emergency and Restoration (ER) implementation**

##### **2.1. Implementation Guide for the Communication Systems Requirements**

Cesar Clause (ENTSO-E) explains the state of play on the implementation guide for the communication systems as prepared by ENTSO-E (slides [here](#)). The purpose of the implementation guide is to provide the TSOs with general view and understanding about the necessary requirements and equipment needed for an efficient and secure communication (voice and data communication), and provides support for all TSOs and relevant stakeholders in order to be able to comply with NC ER. The Guide was submitted to ACER for information, and is available on the ENTSO-E website [here](#).

The guide will be reviewed again at the latest in 2023 after Article 41 on NC ER (Communication Systems) has to be implemented according to Article 55 of NC ER. On the specific topic of satellite communication, satellite communications have limits that need to be taken into account such as capacity to support all the traffic, overload in case of emergency, system dependencies with ground system. These limitations need to be considered and specific satellite system to be used needs to be agreed on by concerned parties.

**The chair thanks ENTSO-E for preparing the implementation guide and underlines the importance of all stakeholders to support its implementation.**

Michael Wilch (EDSO for Smart Grids) welcomes the guidance and comments that it is important to have clarity regarding the redundancy of lines: he would like to have it more clearly stated that the redundancy is only relevant for those lines that are necessary for restoration and restoration purposes. DSOs have plenty they use for normal operations but not all lines, so having redundancy requirements would cause a huge amount of costs without any added value.

Eric Dekinderen (VGB) notes that satellite communication is not granted in case of a pan-European blackout. He inquires if the TSOs have any idea what the capacity of satellite telephones is.

Cesar Clause (ENTSO-E) clarifies that regarding satellite phones and communications, it depends on the different technologies on satellite phones and there are plenty that are providing those. It is up to the TSOs to see what the needs are and what they want to implement at national level. There is a regulation about telecoms but no other regulations. As it is complicated to provide specifications about that, it has been left open and the guidelines are open in that sense. Some TSOs choose high-frequency communication systems, others for other choices, depending on what solutions provide sufficient resilience.

Jean-Philippe Paul (ENTSO-E) clarifies that for the DSOs this requirement should apply only for the lines that are relevant.

Cesar Clause (ENTSO-E) explains that the article says that in any case one can always provide something and the costs should not be exceeding the benefit one will get. The answer is yes regarding the DSO relevance, the solution taken should always be proportionate in terms of costs.

### **3. SOGL implementation:**

#### **3.1. Status of SOGL deliverables and planning**

Jean-Philippe Paul (ENTSO-E) provides an update on status of SOGL implementation and deliverables and the timelines for 2019 for pan-EU methodologies (slides [here](#)). The CSAM/RAOC methodologies were referred to ACER by NRAs in mid-December 2018 for decision, which is expected in June 2019.

Marco Pasquadibisceglie (ARERA) explains the NRAs had some concerns based on 2 topics – the probabilistic approach for system operation and security of supply, and aspects related to cross-RSC cooperation, taking into account that in some CCRs there will be more than 1 RSC with task-sharing between them and different RSC interaction. They were addressed in all comments and drafts to the TSOs and ENTSO-E. The NRAs have escalated this to ACER to avoid further delays with NC implementation.

Jean-Philippe Paul (ENTSO-E) explains that on LFCR, ENTSO-E is working on the requirements to publish some terms and conditions in 2019 on the TP according to SOGL Articles 183-190. Regarding the next milestones for the regional deliverables, the SAOA is expected to undergo NRA approvals in April/May 2019 and to enter into force in June/July 2019. The minimum inertia studies per synchronous area are to be established in September 2019, and further methodologies for the definition of minimum inertia will be developed where relevant, if indicated by the studies, between October 2019 and March 2020. It is expected that the CBA methodology will be approved in January 2019, and further CBA results suggesting the minimum activation period for FCR are expected to be available in January 2020.

The regional coordination proposals (per CCR) are to be delivered 3 months after the approval of the CSAM. Based on the assumption that the CSAM will be finalized by ACER in June, it can be expected that public consultations will take place around July/August 2019 to prepare submission to NRAs in September 2019.

The chair inquires whether the approach for the regional proposals per CCR will be similar as done before with other EU-wide methodologies such as the KORRR, i.e. to be publicly available for early stakeholders' input before a formal public consultation. **The invitation can be extended to different regions to step under ENTSO-E umbrella and present the regional proposals in a stakeholder workshop and keep the ESC informed.**

→ ***For the next SO ESC, ENTSO-E is invited to consider the idea of organising a stakeholder workshop.***

### **3.2. Update on KORRR**

Eduardo Lorenzo Cabrera (ENTSO-E) provides an update on the state of play of the KORRR methodology (slides [here](#)). The NRAs have 2 months to give approval to the proposals as submitted by TSOs on 15 October 2018. National decisions should be issued by 15 January 2019 due to translation delays. There are 4 countries where the NRAs needed the translation into the local language, for all others, the English version is used.

Marco Pasquadibisceglie (ARERA) explains that according to some national frameworks the local language translation is needed for the NRA approval, so there have been some delays due to translation. The last NRAs received the proposals on 20 November and from a legal point, the deadline is counted as of 20 November. The final decision about the KORRR will be communicated to the TSOs the third week of December. English is assumed as the working language for the NCs' TCMs.

### **3.3. Update on methodology for cost-benefit analysis**

Luca Ortolano (ENTSO-E) provides an update on the CBA methodology proposal for the definition of a minimum time period of FCR provision by LER as per SOGL Article 156 (slides [here](#)). The NRAs sent to respective TSOs a request for amendments to the methodology which the TSOs addressed. The methodology has been finalized and submitted to the respective NRAs for approval on 25<sup>th</sup> November 2018. The amendments addressed a number of areas including LER definitions and descriptions of current experiences with LER, length of simulations, interactions with SAOA, evaluation of the impact of on EU market integration in case of different delivery periods set in the Nordic and CE synchronous areas pursuant to the CBA results, among others. As next steps, each TSO is sending the amended proposal to their respective NRAs, and the implementation phase will follow after NRAs' approval.

The ESC welcomes the presentation.

Eric Dekinderen (VGB) inquires as to what data from stakeholders needs to be received by the TSOs for the purpose of this task.

Luca Ortolano (ENTSO-E) explains that for the purpose of the methodology, it would be helpful to receive data on how many units are connected, how many run-off river plants provide FCR, pumped storage providing FCR, etc. If public data are available, that would be very useful. ENTSO-E will put together a list of the data that would be useful to share.

→ ***The chair thanks for the presentation and concludes that the question will be recorded in the Issue Logger and the list of the data will be provided there when available.***

Klaus Oberhauser (VGB) inquires if the CBA is per synchronous area or per country and whether the TSOs should then follow the results of the CBA or just take them as a recommendation.

Luca Ortolano (ENTSO-E) explains that the CBA is per synchronous area. The methodology gives a possible solution of the time period. There can be more FCR with shorter periods or same FCR with longer time periods; then the TSO has the obligation to take this fully into account in order to choose the time period. The results will be discussed at ENTSO-E level to choose the most suitable number which will be then sent to NRAs per synchronous area level. LER and non-LER can be distinguished but the key criterion is the energy equivalent. The security and the cost-effectiveness of potential solutions should also be taken into account.

Jakub Fijalkowski (EC) inquires whether it can be assumed that the TSOs are taking actions regarding the DfDs, according to Article 138 SOGL, to mitigate risks. The current experience and some studies indicate that the origins of the problem might not have been addressed yet. He recommends that the problem is addressed through a separate task force to make proposals on potential solutions.

Luca Ortolano (ENTSO-E) explains that regarding the DfDs, this information is in the LFC block agreements. ENTSO-E has started working on this topic through a project to tackle various solutions from both system operation side and market side to ensure alignment.

Jean-Philippe Paul (ENTSO-E) explains that the output is a national possibility provided for in the SOGL and each TSO has then to proceed with a consultation process at national level. It would be linked to national rules on imbalance.

Marco Pasquadibisceglie (ARERA) explains there is a stronger link with market behaviour as it can be easily recognized that the most critical time period is the change between the hours as market can change the results in a significant way as well as the flows in the network. Coordination between all TSOs can be critical for frequency events and the use of some form of mitigation measures as per Article 138 SOGL to ensure the targets for quality can be met in the future. If there is no coordination across a synchronous area, then the issues with deterministic frequency deviations can't be solved in a coordinated manner, and a significant amount of resources might be needed to tackle this.

### **3.4. Update on dynamic stability assessment and minimum inertia studies**

Knud Johansen (ENTSO-E) provides an update on the activities in ENTSO-E regarding the implementation of SOGL Articles 38 and 39 on the requirements for the dynamic stability monitoring and assessment (Article 38) and dynamic stability management (Article 39) (slides [here](#)). A number of TSO and stakeholder workshops took place in 2018, and the next action expected include an internal report by the TSOs by summer 2019 on the progress of minimum inertia studies as per Article 39(3)(a). For DSA (Article 38), outcomes of a TSO survey on Dynamic Stability Assessment (DSA) and Minimum Inertia is currently in evaluation. A third stakeholder workshop is expected to take place on 15 May 2019.

The chair thanks ENTSO-E for organising the stakeholders' workshops and the tackling of this topic across the codes.

Srinivasa Raju Addala (EUGINE) inquires whether the expectations from stakeholders on establishing a set of clear definitions/requirements on the algorithms/assumptions related to frequency stability aspects will come after the next workshop or at another time.

Knud Johansen (ENTSO-E) explains that the expectation is to have those requirements which are discussed per connection area but one issue that could be specified is synthetic inertia. The current findings are that there is no need for that. The outcomes of the dynamic stability assessment will be to request this inertia. In order to avoid surprises in the future though, the proposed approach is to have a list of principles for Article 39 for the methodology, e.g. for the time being fast frequency response functionality already has the requirements for these. The ER NC is different as Articles 38 and 39 are for normal operations only. There is a specific part to look at system split – the requirements have been discussed in several documents and the next step is to try to create a coherent story from TYNDP and across CNCs and operational codes on the subject of dynamic stability issue and future system design.

Michael Wilch (EDSO for Smart Grids) notes he would welcome if ENTSO-E developed a coherent approach across documents and requirements, including a set of reference scenarios. He inquires as to the next steps: if there will be reference scenarios or principles developed subsequently. A set of reference scenarios in a limited number would help stakeholders. Stakeholders would then welcome a discussion or consultation on those scenarios.

Knud Johansen (ENTSO-E) clarifies that the aim is to have the principles for the reference scenarios first. In each synchronous area, the aim is to have a set of principles, how inertia is calculated etc. ENTSO-E will continue working toward agreeing on a set of principles and developing a catalogue of reference scenarios per synchronous area.

Srinivasa Raju Addala (EUGINE) notes that regarding Article 39, there are 300ms specifications and FRT also specifying this but nowadays there is new technology which allows for fault clearing time shorter than 100ms and recommends that the fault clearing time in the future is shortened to reflect those new developments.

Knud Johansen (ENTSO-E) explains this is already the case in some reports but not very visible and understandable for all, so this will be improved in the future.

The chair concludes that inertia studies focus on normal and alert system operation while the split scenarios for CE serve the purpose to help identify potential additional needs or requirements towards inertia, and those haven't been assessed yet. Article 39 SOGL should be read in a broader legal way and tackle the system states beyond just normal and alert state of operation. When things start to evolve quickly due to a small incident, that incident can have a wide spread impact (as in 2006), and it is difficult to classify system states in such a short time. Equally, it is important to ensure that when it comes to the implementation of requirements for generators and specifications for synthetic inertia capabilities, the requirements for synthetic inertia are known well in advance before generators with such capabilities need to be installed in the system. Then all stakeholders can respond to the system needs. **It is very important to have a long-term insight into system design and ENTSO-E should take these considerations into account in its work when addressing this.**

### **4. Stakeholder topics: N/A**

## **5. AOB, next meeting dates**

The dates for 2019 are approved as suggested at the Joint SO-GC ESC session on 13 December.

GC ESC	SO ESC	MESC	BSG
21 March, Brussels	21* March, Brussels		
5 June, ACER	4 June, ACER		
12 September, ACER	11 September, ACER		
12 December, Brussels	13 December, Brussels		

## **6. Follow-up actions**

- 1. (from 6<sup>th</sup> SO ESC) SOGL: ENTSO-E is invited to provide visibility regarding the numbers and the approaches taken regarding the implementation of the LFC block operational agreements and reserve sizing, for example regarding the probabilistic approaches applied in different areas and how those compare to each other. The information provided should further include (per MS/control block): the actual percentage in terms of amount of time in which imbalance has to be covered (157.2h and i); results of the probabilistic methodology; the size of dimensioning incident; the resulting FRR capacity; the split of FRR capacity between mFRR and aFRR. The chair invites ENTSO-E to follow the GC ESC approach by preparing an excel table similar to that on the banding values and invite TSOs to feed in data. The item will be left open for further discussion.*
- 2. (from 6<sup>th</sup> SO ESC) ENTSO-E should collect information regarding SOGL and NC ER implementation and ensure transparency through the Active Library and the monitoring file. ENTSO-E, ACER& EC should look together into what additional proposals should be further made available on the website or through the Active Library. The follow-up action should be kept open and subject to further discussion regarding the status at the next ESC.*
- 3. (from 6<sup>th</sup> SO ESC) ER - defence and restoration plans: ENTSO-E is looking into organizing a workshop for the exchange of experiences and examples from different Member States' national implementation processes, currently foreseen to take place in April/May 2019, or possibly earlier in time as per the ESC recommendation.*
- 4. Regional coordination proposals (per CCR): ENTSO-E will look into the feasibility for organizing a stakeholder workshop on the regional coordination topic.*
- 5. The question regarding types of data needed by TSOs for the CBA methodology and analysis will be recorded in the Issue Logger and an answer will be provided there.*