

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

Friday, 13 September 2018 from 13:00 to 16:00

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

### Draft Minutes

Participants			
Uros	GABRIJEL	ACER	Chair
Jakub	FIJALKOWSKI	ACER/E-Control	
Marco Savino	PASQUADIBISCEGLIE	ARERA	
Reinhard	KAISINGER	E-Control	
Maria-Eugenia	LEOZ-MARTIN-CASALLO	European Commission	
Blanca	ANRES ORDAX	European Commission	
Jean-Philippe	PAUL	ENTSO-E	
Knud	JOHANSEN	ENTSO-E	
Eduardo	LORENZO	ENTSO-E	
Ralph	PFEIFFER	ENTSO-E	
Cesar	CLAUSE	ENTSO-E	Via webstreaming
Kristel	ROMEO	ENTSO-E	
Stela	NENOVA	ENTSO-E	
Martine	VERELST	ENTSO-E	
Tahir	KAPETANOVIC	ENTSO-E	Via webstreaming
Juan	MARCO	EDSO for Smart Grids	
Manuel	JAEKEL	EDSO for Smart Grids	
Luca	GUENZI	EUTurbines	
Eric	DEKINDEREN	VGB Powertech	
Klaus	OBERHAUSER	VGB Powertech	
Pierre	CASTAGNE	EURELECTRIC	
Adolfo	LOPEZ TEJIDO	EURELECTRIC	
Garth	GRAHAM	EURELECTRIC	
Stein	OVSTEBO	IFIEC	
Marc	MALBRANCKE	CEDEC	
Florentien	BENEDICT	CEDEC	
Brittney	BECKER-ELZAREI	EASE	
Matteo	MORASCHI	EASE	
Pavla	ERHARTOVA	Europex	
Paul	GIESBERTZ	EFET	
Julie	FINKLER	ClientEarth	
Toma	MIKALAUŠKAITE	Orgalime	Via Webstreaming

### **1. Opening**

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

The Chair, Uros Gabrijel (ACER), welcomes the participants to the 6<sup>th</sup> SO ESC meeting. The draft agenda is approved with additional interventions under item 3 on NC on Emergency and Restoration implementation by Europex, EFET, and questions from Eurelectric.

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

The minutes of the 5<sup>th</sup> SO ESC meeting are approved without further comments (available [here](#)).

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

*Action 1: Information on NC ER national implementation will be published on the ENTSO-E network code website, and ENTSO-E is looking for a solution similar to the Active Library by the beginning of 2019.*

*Action 2: The question on technical differences on achieving parameters in ER (LFDD) across various countries will be further addressed under item 3.*

*Action 3: Following the NRAs' Request for Amendments, according to the updated KORRR proposal, the responsibilities regarding the installation, configuration, security and maintenance of communication links for data exchange up to the communication interface point shall be defined at a national level.*

*Action 4: The answers to the questions raised by VGB at the 9<sup>th</sup> GC ESC meeting regarding interpretation of certain articles in the SO and Connection NCs are being prepared and will be made available on the ENTSO-E website. Follow-up questions to the ENTSO-E response are welcome via e-mail and at the next SO ESC meeting.*

*Action 5: ENTSO-E will take the ESC comments regarding the NC development and amendment processes to the NC IMG. The NC IMG met in July and the minutes of the meeting are available. The direction is to have one single point of contact concerning the submission of amendment proposals for NCs and GLs. An update of the NC IMG will be provided at the joint SO-GC ESC session on 14 September.*

*Action 6: CSAM: All proposals, together with supporting documents and responses to public consultation comments are published on ENTSO-E's website under the network codes section.*

*Action 7: ER: ENTSO-E will present a draft proposal regarding general principles for suspension and restoration under agenda item 3.*

*Action 8: ER: ENTSO-E should collect national implementation plans and make them available on the site in a similar manner as currently done with the CNCs. Information on NC ER national implementation will be published on ENTSO-E website under network codes.*

*Action 9: The topic of imbalance settlement in the context of market suspension and the link with ER and harmonization of rules for suspension and restoration of market activities has been brought to the attention of the BSG team, which will take it into account.*

*Action 10: ER: A TSO workshop is planned in the end of October. The next SO ESC will be informed of the outcome. Garth Graham (Eurelectric) explains that in GB stakeholders are providing comments to the defence plan and it would be helpful across the Union to have a workshop with stakeholders before the plans are finalized in December. The Chair concludes that ENTSO-E should discuss again if there is a possibility to show examples of different Member States which could be taken in other MS in their national implementation processes. ENTSO-E will consider this request and inform the ESC.*

*Action 11: ACER will provide an update regarding the status of implementation and the uncertainties of application of mass products PGMs at the 11<sup>th</sup> GC ESC meeting on 14 September 2018.*

## **2. SOGL implementation:**

### **2.1. Key Organizational Requirements, Roles and Responsibilities in relation to data exchange – request for amendment**

Eduardo Lorenzo (ENTSO-E) explains the state of play on the KORRR methodology (slides available [here](#)). The KORRR methodology was submitted to the NRAs for approval in March 2018. NRAs sent a request for amendments on 15 August 2018. ENTSO-E had two months to respond to the request and to send an updated version of the KORRR methodology to all NRAs (by mid-October). 29 comments were received, concerning articles that need to be clarified (Article 1, Article 2, Article 4, Article 8, Article 10, Article 11, Article 13 and Article 15), articles that should be decided at national level (Article 3, Article 5, Article 7, and Article 12) and articles that need more details (Article 9).

### **2.2. Methodologies for coordinating operational security analysis and for assessing the relevance of assets**

Jean-Philippe Paul (ENTSO-E) provides an update on the planning and next steps for the Coordinated Security Analysis (CSA) and the Relevance of Assets for Outage Coordination (RAOC) methodologies which will be submitted to all NRAs on 14 September, including translations as provided by each TSO when submitting the proposal (slides available [here](#)). The final proposals and answers to stakeholder comments are available on the ENTSO-E website. The NRAs will have six months to decide on the proposals. Some of the changes proposed in the final versions of the methodologies as submitted to NRAs include additional criteria to define when an option may be activated by a TSO, and regarding influence evaluations, additional clarification on the use of network models for horizontal/diagonal assessment versus vertical, the introduction of a new Article 4 in CSA and RAOC focused on the conditions where dynamic aspects may be taken into account, among others. Other changes include risk management (a new reporting process on R&D progresses on probabilistic approaches for security assessment & for a data collection process (Article 43)); remedial actions coordination through inter-RSC coordination, and provisions for managing uncertainties on injection.

Jean-Philippe Paul (ENTSO-E) updates the SO ESC on the state of play on the SAOA proposal, which includes certain requirements at synchronous area level to define several properties and elements and is then subject to NRA approval. The finalized version of the proposal taking into account stakeholder comments will be submitted to the NRAs of each synchronous area by 14 September.

Pierre Castagne (Eurelectric) notes that there were recently national consultations on the LFC block operational agreement and raises the idea regarding the need for visibility on these proposals. At the MESC, there is a benchmark on capacity calculation and he suggests it could be beneficial to have a benchmark of what is done in the implementation of the guideline to provide a view on what is happening in the various countries so stakeholders can follow the developments.

Jean-Philippe Paul (ENTSO-E) explains that the main aspect of the implementation on the topics of LFC and reserve sizing is discussed and consulted at national level. A comprehensive report on these topics can be prepared if time allows. ENTSO-E can take the list of questions and this can be provided further.

Garth Graham (Eurelectric) agrees it would be beneficial to provide more visibility in the Active Library for SOGL and for ER and the progress on relevant provisions.

Jakub Fijalkowski (E-Control) explains that the LFC block operational agreement under SOGL Article 119 relates to reserve sizing and NRAs intend to ask ENTSO-E about the various approaches undertaken to reserve sizing (Article 159 and min 99% covering imbalances) and what the result of the sizing is, considering the speed difference between aFRR and mFRR and the potential impact. **ENTSO-E is invited to provide visibility regarding the numbers and the approaches taken regarding this matter, for example regarding the probabilistic approaches applied in different areas and how those compare to each other.**

Eric Dekinderen (VGB) inquiries about the state of play on the frequency containment reserves (FCR) and about the next steps regarding the relevant processes before the end of 2018.

Kristel Romeo (ENTSO-E) explains there is a CBA methodology for this. ENTSO-E received a request for amendments from NRAs. The proposal is being updated, and the timeline is the same as for the data exchange proposal (by mid-October to be submitted to NRAs who will need to decide by mid-December). After the approval, TSOs have 12 months to conduct the analysis based on the methodology.

Garth Graham (Eurelectric) requests that ENTSO-E provides additional information on the state of play of developments on SOGL implementation regarding Article 40.5 and expectations towards stakeholders such as DSOs and SGUs.

Jakub Fijalkowski (E-Control) clarifies that Article 40.5 refers to proposals at national level regarding the applicability and scope of the data exchange, but there is no obligation towards TSOs to propose changes. If the TSOs do not propose changes to the scope, the default scope as per SOGL applies instead.

**The Chair invites ENTSO-E to collect information regarding SOGL and NC ER implementation and to ensure transparency through the Active Library and the monitoring file.**

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

#### **3.1. Principles for suspension and restoration of market activities**

Martine Verelst (ENTSO-E) explains the state of play on NC ER implementation and the work of the ENTSO-E ad-hoc group dealing with the NC ER to facilitate implementation (slides available [here](#)). NC ER's chapter on Market Interactions give guidance to facilitate suspension and restoration of market activities and stipulates in which situations market activities may be suspended (Article 35.1), which activities may be suspended (Article 35.2a-f), and which factors should be taken into account when considering suspension (Article 36.4). It is considered that TSOs should ensure the continuity of energy transition in blackout, restoration and suspend market activities only as a last resort while also ensuring interaction with relevant stakeholders in case of such suspension. The requirements are set on individual TSOs, which should develop proposals at national level by 18 December 2018. The TSO proposals then require an NRA approval. The proposal for imbalance settlement in case of suspension is out of scope of the NC ER as it is a national issue with local implications so there is no guidance from ENTSO-E on this aspect. According to the NC ER, market activities may be suspended in situations where the transmission system of the TSO is in emergency or blackout state, the TSO has exhausted all options provided by the market and the continuation of market activities under the emergency state would deteriorate, the continuation of market activities would decrease significantly the effectiveness of the restoration process to the normal or alert state, or the tools and communication means necessary for the TSOs to facilitate market activities are not available.

Activities that may be suspended include those related to provision of data from one entity to another (for example the provision of schedules by market parties) or other market activities, which is a very broad term. The ENTSO-E's expert team is considering an inventory of "other market activities" (Article 35.2.f) and for providing guidance for suspension for each other market activity. The list of "other market activities" which are identified as relevant by ENTSO-E include long-term capacity allocation, day ahead market coupling, intraday market coupling, intraday market parties' trading on a NEMO platform within a Bidding Zone, balancing markets, OTC trade, except imbalance settlement. In case a country is in a blackout state, it would not suspend all market coupling but rather activate fall-back procedures to keep all activities up and running, and only suspend the market if there is no other choice. ENTSO-E will provide a document with guidance on these aspects and each TSO has to submit its rules to its NRA. The guidance however is not obligatory per se.

**The Chair welcomes the presentation provided and suggests that, in coordination with the MESC chair, market related discussions, take place in the MESC in the future. Also, the SO ESC shall be kept informed of the relevant discussions taking place in the MESC.**

Pavla Erhartova (Europex) inquires whether the ENTSO-E guidance provides obligations for the TSOs to follow given that there will be a report at EU level and an attempt to harmonize everything (slides available [here](#)).

Martine Verelst (ENTSO-E) explains that the ENTSO-E guidance relates to the day-ahead market coupling but not to imbalance settlement, which is out of scope of the ENTSO-E guidance. The ENTSO-E guidance is not binding but it is to be taken into account by the TSOs when they write their rules. After 2 years, as per the NC ER, ENTSO-E will assess the level of harmonization and if divergencies are observed in some areas, ENTSO-E will work on harmonizing relevant aspects.

The Chair notes that as per the NC ER, a report should be prepared by ENTSO-E by December 18, 2020 on the level of harmonization of the rules for suspension and restoration of market activities established by the TSO and will be taken up by NRAs and national bodies responsible for implementing the NCs.

Pavla Erhartova (Europex) notes that it would be beneficial to organize a stakeholder workshop to have a discussion on these aspects, also with regard to the possibility of NEMOs to provide input to the discussions of the expert team, in a similar way as some stakeholder workshops have been organized on the topic of imbalance settlements.

Martine Verelst (ENTSO-E) clarifies that the discussions on this are nearly closed but she will check back regarding the possibility for organizing a workshop on this topic.

Garth Graham (Eurelectric) notes that it appears that in an emergency event, there is reluctance to suspend the market as there can be significant financial implications for the generators if demand is off. If a party is asked to trade during such an event, when at the same time there is no visibility as to how much of the network is not available, while having potentially a financial responsibility, there are significant implications for continuing the market. In such cases, suspending the market for a short period of time could actually be in everyone's interest. Some generators can be available to help the TSOs instead of the other way around.

Paul Giesbertz (EFET) supports the idea to bring the topic to the MESC for future discussions, while simultaneously ensuring alignment with SO. EFET sees this as a very sensitive issue as markets should work also in stressed situations. Scarcity prices can only emerge if the market is not distorted in actual crises. EFET would welcome a more precise definition of what constitutes "other market activities that could be suspended" and suggests that self-dispatching plants' activities could also be added to the list of other market activities. EFET sees the importance of suspending the market only in blackout situation and for system restoration. In the event of a brownout and under-frequency load shedding, the market should be functioning. Market prices should be there to continue helping the situation even if there are extreme cases. Regarding the market suspension definition, it might be useful to clarify about the distinction to be made between market suspension as an administrative action restricting from action with no physical/grid impact, and the need for a physical act, as the TSO wouldn't know if the market will respond or not to match the physical need fast enough. EFET would like to provide a written input on this topic possibly for the following MESC meeting.

Cesar Clause (ENTSO-E) explains that emergency and restoration are very rare situations (with the last one in 2006 at European level). He explains that if the market continues running, there can be a different interaction directly between the generator and the TSO. The market would run to make the price settlement, but on the physical grid the TSO can take action and would take control on the relevant energy unit. The point of suspending market activities is if the market activity can deteriorate the possibility for the TSOs to have control of the physical side and the real action (like false information to market players, or a settlement not making sense).

Paul Giesbertz (EFET) notes that the market should have a supporting role to help balance supply and demand, but does not take away the physical possibility of the TSO to act in those situations. He welcomes if the ENTSO-E guidance could clarify this further, and highlights the need for correct imbalance settlements within the context of an interconnected European market, as the imbalance settlement is the basis for all prices in the EU power market.

Eric Dekinderen (VGB) notes that one of the NC ER procedures is a top-down restoration process supported by other countries so he would like to understand if the ENTSO-E intention is to provide some guidance on this and whether all states should make arrangements with neighbouring states to define the top down procedures especially regarding financial aspects. He wonders if ENTSO-E is looking at a general rule for compensation for all TSOs for such a case or each MS has to make agreements for this.

Jean-Philippe Paul (ENTSO-E) explains that the system would normally be limited by dynamic issues in such cases and it may be easier to get the capacity from a local generator. Any exchange of energy between two TSOs would be based on the terms of references between them. The settlement is defined at national level. The top-down approach can help make the system working again, but the intention is not to feed energy across borders.

Jakub Fijalkowski (E-Control) explains that the top-down approach as in the NC ER is in fact an implementation of 2<sup>nd</sup> recommendation of the final report on the system disturbance of 4 November 2006<sup>1</sup> concerning the UCTE master plan. At that time, there has not been a clear guidance on how to resynchronize after a system-split, and the top-down restoration approach was developed in the context of this experience.

### ***3.2. Regional coordination of measures***

Cesar Clause (ENTSO-E) provides an overview on the coordination framework at regional level of the system defence and restoration plans as per NC ER (slides available [here](#)). Each EU TSO when designing its system defence plan and restoration plan should ensure consistency (within the synchronous area (SA) and with neighbouring TSOs belonging to another synchronous area) of the measures as per Article 6.1), including inter-TSO assistance and coordination in emergency state (defence plan); frequency management procedures (defence plan & restoration plan); assistance for active power procedure (defence plan); and top-down re-energisation strategy (restoration plan). TSOs within ENTSO-E are working on a proposal to deliver (on a voluntary and early implementation basis) the measures to the RSCs, after NRAs have approved the proposals defined in Article 4.2 of NC ER. The RSCs would have the task to check the consistency of those measures. ENTSO-E is working on a guidance document and a template to help TSOs to provide information to RSCs in a consistent way. These documents are currently under review in ENTSO-E.

Garth Graham (Eurelectric) notes it would be helpful for stakeholders if the relevant documents regarding any non-confidential measures can be shared with the ESCs after the 18 December deadline as they may have implications for stakeholders who might be required to do some actions according to the plans.

#### **ENTSO-E will look at which measures from the defence and restoration plans can be made publicly available and provide transparency on those.**

Cesar Clause (ENTSO-E) explains that at the request of ACER, ENTSO-E prepared an „Implementation Guide for the Communication Systems Requirements” which was recently finalized and is now awaiting final approval from ENTSO-E respective bodies (slides available [here](#)). The implementation guidance provides the TSOs’ general view and understanding about the necessary requirements and equipment needed for an efficient and secure communication and provides support for all TSOs and relevant stakeholders in order to be able to comply with the NC ER. The technical requirements relate to ensuring equipment redundancy, backup power supply of minimum 24h to ensure all parties can be contacted and a user interface to guarantee identification of the incoming calls to achieve the requirements as per the NC ER. Data communication systems should fulfil same requirements as voice communication systems (redundancy, back-up power supply). Type A or B PGMs relevant for restoration are not required to have voice communication. It is of utmost importance that the relevant operator (DSO or TSO) is able to directly control these units in the restoration process.

Garth Graham (Eurelectric) wonders if the TSOs have checked whether their control rooms have enough satellite phone bandwidth to take all DSOs’ requests if needed and notes it might be helpful if TSOs check with the satellites as to how many lines are available in total and how many are available to communication for such situations.

Cesar Clause (ENTSO-E) explains that the guidance document does not go into greater detail. At national level, this would depend on the relevant agreement and service providers and the purpose of the line, since a part of the bandwidth could be reserved for an institution in case of a major event like a blackout and this might impact the TSOs’ use with the DSO and stakeholders.

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<sup>1</sup> [https://www.entsoe.eu/fileadmin/user\\_upload/\\_library/publications/ce/otherreports/Final-Report-20070130.pdf](https://www.entsoe.eu/fileadmin/user_upload/_library/publications/ce/otherreports/Final-Report-20070130.pdf)



Eric Dekinderen (VGB) warns that wind and PV type A and B generators communicate through the internet, which is not blackout-proof. Besides, if there is no voltage on the MV network and a blackout lasts more than 5min, it is impossible to re-energize the onshore wind turbines.

Cesar Clause (ENTSO-E) explains that the implementation guidance at national level can be shared with the other stakeholders to inform of how the TSO plans to implement the requirements.

Garth Graham (Eurelectric) notes that regarding communication of voice or data for type A or B generators in a blackout situation might be in practice impossible due to various reasons depending on size, criteria or human resources for the small plants.

Cesar Clause (ENTSO-E) explains that there are requirements in the NCs and the implementation guidance is giving guidance on how to implement those requirements but TSOs don't have the capacity to check and evaluate on every single site the reliability of a given plant as there is no agreed standard to define how to achieve these requirements.

**Stakeholders request ENTSO-E to check with satellite communication providers to find out if there are enough simultaneous connections available in case of a general blackout in Europe.**

Garth Graham (Eurelectric) notes that according to Article 4.2 and 4.4, the terms and conditions for system defence providers to be provided by TSOs by 18 December 2018 should be published and invites ENTSO-E to provide those on the Active Library on the ENTSO-E website. He would like to see how harmonization between countries regarding the terms and conditions is working in practice.

**In order to facilitate transparency obligations pursuant to Article 7, the Chair invites ENTSO-E to provide TSOs with the means to publish their proposals for terms and conditions of the NC ER at the EU level.**

Marc Malbrancke (CEDEC) provides an update on the TSO-DSO joint work regarding the NC ER: the working DSO-TSO group on NC implementation will further look at certain elements of NC ER and will work on the establishment of a common understanding of the amount of demand to be disconnected as per annex I in the NC ER regarding LFDD and the link with DCC (regarding the 150 milliseconds values and LFDD relays). The ESC will be kept informed of the work.

**4. AOB, next meeting dates**

The Chair invites ENTSO-E to prepare proposals for SO ESC meeting dates for 2019, in similar weeks as in 2018 with 2 meetings in Brussels and 2 in Ljubljana, back to back with the GC ESC before the next meeting in December.

GC ESC	SO ESC	MESC
13 December, ENTSO-E	14 December, ENTSO-E	5 <sup>th</sup> December, CEER, Brussels

**5. Follow-up actions**

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 will be made available on the ENTSO-E website once finalized.
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.
3. ER: ENTSO-E will consider if there is a possibility to organize a workshop for further discussion on aspects to allow NEMOs and other stakeholders to inform the discussions on the ENTSO-E guidance and 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.
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.
6. ER - Defence and Restoration plans: ENTSO-E should inform at the next SO ESC in December the outcomes of the TSO workshop taking place in the end of October regarding ER defence plans.
7. ER - Defence and Restoration plans: ENTSO-E should consider if there is a possibility to organize a workshop for an exchange of experiences and examples from different Member States' national implementation processes, and inform the ESC.

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.
9. ENTSO-E should collect information regarding SOGL and NC ER implementation and ensure transparency through the Active Library and the monitoring file.
10. Future discussions on the topic of market suspension and ER should take place in the MESC. The SO ESC shall be kept informed of the relevant discussions taking place in the MESC.
11. The ESC will be kept informed of the results of the discussions on ER aspects under the TSO-DSO NC implementation working group.
12. ENTSO-E should prepare proposals for meeting dates for 2019 ahead of the SO ESC meeting in December.