

24th System Operation European Stakeholder Committee (SO ESC)

15 March 2023, 09:00-11:30

Online

Draft Minutes

| Participants | | |
|--------------|-------------------|---------------------|
| Uros | Gabrijel | ACER (Chair) |
| Felipe | Castro Barrigon | European Commission |
| Eric | Dekinderen | VGB Powertech |
| Georgios | Antonopoulos | ACER |
| Maria | Barroso Gomes | ACER |
| Mariia | Melnychenko | ACER |
| Aleksander | Glapiak | ACER |
| Pavla | Erhartova | Europex |
| Marc | Malbrancke | CEDEC |
| Gunnar | Kaestle | COGEN Europe |
| Marco | Pasquadibisceglie | ARERA |
| Thierry | Vinas | Eurelectric |
| Mike | Kay | GEODE |
| Freddy | Alcazar | Eugine |
| Thomas | Holzer | BNetzA |
| Lisa | Dallinger | BNetzA |
| Vidushi | Dembi | WindEurope |
| Martin | Stoessl | Orgalime |
| Hervé | Bielmann | EU Turbines |
| Marie | Bourrousse | Eurelectric |
| Adriana | Guth | BNetzA (NRA) |
| Tony | Hearne | Eurelectric |
| Klaus | Overhauser | VGB Powertech |
| Abel | Santamaria Rivera | Iberdrola |
| Stein | Ovstebo | IFIEC |
| Luca | Guenzi | EU Turbines |
| Cherry | Yuen | ENTSO-E / Swissgrid |
| Victor | Charbonnier | ENTSO-E |
| Luca | Ortolano | ENTSO-E / Terna |
| Gamze | Dogan | ENTSO-E |
| Daiga | Dege | ENTSO-E |
| Elma | Leto | ENTSO-E |
| James | Hellinckx | ENTSO-E |
| Laurent | Rosseel | ENTSO-E / RTE |
| Kacper | Kepka | ENTSO-E |
| Natalie | Kulla | ENTSO-E |
| Habir | Paré Nsangou | ENTSO-E / Coreso |
| Rafał | Kuczyński | ENTSO-E / PSE |
| Athanasios | Katsikopoulos | ENTSO-E |

1. Opening

1.1. Review of the agenda, approval of last meeting minutes

The Chair (Uros Gabrijel) opens the meeting and asks for comments on the agenda. ENTSO-E (Cherry Yuen) points out a small change in the agenda.

The minutes of last meeting are approved. Two topics are added in the AOB:

- Eurelectric (Thierry Vinas) wants to discuss the incident of the Nordlink
- COGEN Europe (Gunnar Kaestle) wants to discuss deterministic frequency deviation

1.2. Review of Actions

ENTSO-E (Cherry Yuen) presents the pending actions from previous meeting.

- Wind eclipse work to be relaunched after the winter situation closes. Feedback will be provided in the next meeting.
- On the KORRR amendments topic, Geode (Mike Kay) specifies that EU DSO Entity is ready to discuss KORRR amendments, but all parties agreed that other priorities should first be tackled i.e. connection network codes amendments are regularly discussed between ENTSO-E, EU DSO Entity, ACER and European Commission. The topic might be reprioritised depending on the evolution of the drafting of the Network Code Demand Response.
- The action on member list updated has been done. If any issue with it, members are invited to contact ENTSO-E (gamze.dogan@entsoe.eu).
- Clarification on abbreviations were asked:
 - o LLEFD stands for Long Lasting Extraordinary Frequency Deviation – the deviation is considered as extraordinary if less than 50mHz but lasting more than 15 minutes.
 - o CNC stands for Connection Network Code

As a follow-up of the Rate of Change of Frequency (RoCoF) action, ENTSO-E (Cherry Yuen) then presents findings and recommendations from relevant previous ENTSO-E reports.

VGB Powertech (Eric Dekinderen) stresses that mitigation of RoCoF should be a combined effort of stakeholders. He further raises the following points:

- ENTSO-E studies were conducted before the natural gas crisis, did ENTSO-E assess if the conclusions are still valid?
- The majority of existing power plants have been designed without any concern to RoCoF. Currently, RoCoF issues are already present at 100mHz, what will happen at 1Hz ?
- A report states that 120 msec is sufficient to measure frequency, is it based on test or is this a theoretical value?

Eurelectric (Thierry Vinas) points out some interpretation issue in the report statements between local and global RoCoF and the need to impose minimum inertia. ENTSO-E (Cherry Yuen) clarifies that there is no need to impose minimum inertia requirement for normal state operation of the interconnected system, but RoCoF withstand capability is stated as one of the mitigation measures necessary to cope with increasing risk of system splits.

EU Turbines (Luca Guenzi) points out that implementation of countermeasures by TSO is key (e.g. installation of synchronous condensers), it is unclear why ENTSO-E proposes additional requirement for RoCoF in RfG beyond the threshold that is deemed necessary for stable condition. There is no difference between local and global RoCoF for a time duration of 500ms. In SOGL article 38 requires TSOs to carry out a dynamic stability assessment to assess grid instability conditions and article 39 requires TSOs to implement countermeasure to ensure minimum inertia when needed which makes the imposition of additional requirements on generator irrelevant. An update on the status or planned deployment of such countermeasure has been requested.

EU Turbines (Herve Biellmann) specifies that many stakeholders are not convinced that there is no need for minimum inertia because the grid never operates at zero inertia. Furthermore, he explains that the synthetic inertia (which can be provided by grid forming power converters fitted on RES) is expensive in comparison to the cost of inertia provided by rotating solutions (synchronous condensers and turbo-generating units).

In addition, he highlights possible harmonic issues in the future in grids with very high share of power converters.

Actions:

- VGB Powertech will send 1) his updated members for ENTSO-E to update the list on SO ESC website, and 2) a list of relevant questions on RoCoF for ENTSO-E experts to address.

2. *Rate of Change of Frequency (RoCoF)*

EU Turbines (Luca Guenzi) presents the slides of EU Turbines view of RoCoF issue.

ENTSO-E (Cherry Yuen) clarifies that ENTSO-E is expecting that the simulations will be re-run to consider other cases than the German one. A clarification on what is expected from ENTSO-E in terms of documents is needed because there have been several exchanges of documents (available in the current presentation and/or via email). Moreover, ENTSO-E is looking for innovative solution proposals to tackle the issue.

EU Turbines (Luca Guenzi) specifies that there are physical limitations to what the machines can do. These limit the scope of innovative solution to be proposed. As no new data were provided by the TSOs based on which new scenarios can be investigated, the simulations have not yet been re-ran.

EUTurbines (Herve Biellmann) explains that permanent innovation/investments are made by turbine manufacturers in order to reduce the Cost of Electricity produced by these units (for example by increasing their power output and their efficiency). One consequence of these innovations is that the units are becoming bigger and bigger, resulting in higher inertia values. He highlights the benefits of these big units to maintain the grid inertia, and consequently mitigate high RoCoF values.

The Chair (Uros Gabrijel) summarises the issue because there are parallel stakeholders engagement activities to the GC ESC on this topic. Studies identify needs for system inertia (although they are not addressing the entire synchronous area of continental Europe), and risks of more recurrent system split which demonstrates the need for higher RoCoF withstand capability. Several workshops were done on this topic. One conclusion is that minimum inertia is not an issue unless there is a system split. ENTSO-E suggested in its publication Frequency Stability in Long-Term Scenarios and Relevant Requirements of 3 December 2021, the solutions be discussed as part of the defence and restoration plans. He therefore asks what TSOs and RCCs have done towards the establishment of the requirements of minimum inertia as part of the defence and restoration plans in the context of the implementation of NC Emergency & Restoration.

ENTSO-E (Rafał Kuczyński) states that system splits events and configuration can hardly be anticipated as part of emergency and defence plans. Retrospective analysis can be done on previous system splits to see if sub-systems (islanding) complied with inertia limits, but this is a difficult task.

The Chair (Uros Gabrijel) concludes that the feedback from original equipment manufacturers (OEM) is that generators cannot comply with RoCoF withstand capability as proposed by ENTSO-E. This means complementary solutions have to be found. He expects that ENTSO-E/TSOs follow up on the recommendations of previous reports regarding these other measures such as the reassessment of existing restoration plans that may no longer be applicable because of changing system conditions (cf. frequency stability in long-term scenarios and relevant requirements December 2021)

3. *Update on implementation actions at pan EU level*

ENTSO-E (Cherry Yuen) presents the upcoming deliverables. If members have questions, they can raise them via email and they will be addressed at the next meeting.

4. *Update on Winter 22/23 preparation*

ENTSO-E (Laurent Rosseel) presents the status of the workstreams in the dedicated Task Force established by TSOs ahead of Winter 22/23. The operational Group meets each Friday to analyse and discuss the results of the assessments. An example of synthetic results was shown that presents the system status of each country. No questions were raised by the stakeholders.

5. Common Grid Model (CGM) Implementation

ENTSO-E (Habir Paré Nsangou) presents the status of CGM Implementation. The complexity of the process lies in the needs to be covered that are related to different services and the different timeframes of those services. The actions to support the involvement of TSOs in the CGM process and to improve quality and performance of IGMs (and thus CGM) are presented. Those require close and continuous collaboration between Regional Coordination Centres (RCCs), TSOs and ENTSO-E. The focus area for 2023 were then presented:

- Operational Planning Data Environment (OPDE) delivery and usage
- Grid modelling
- Use of CGM in operational processes

Eurelectric (Marie Bourrousse) asks if TSOs are expecting operational gains when RCC move to CGM use in terms of numerical gains on available cross-border capacity. ENTSO-E clarifies that there is no analysis to provide, but the new model of CGM allows for a more granular view of the system so efficiency of the process should increase.

Eurelectric (Marie Bourrousse) asks about the timeline for CGM and the coordinated regional operational security analysis (CROSA) methodology. Coordination is ensured with the other relevant task forces to draft a timeline of dependencies between the processes in need for CGM to be performed.

ACER asks that the focus for next meeting to be on RCC tasks and how they are using Common Grid Model Exchange Standard (CGMES).

Actions:

- ENTSO-E will provide an update on CGM use by RCCs in the next SO ESC meeting

6. Update on Tmin FCR LER

LLEFD (Long-Lasting Extraordinary Frequency Deviation)

ENTSO-E (Luca Ortolano) presents the overview of the request for amendments received by the NRAs after the proposal submission. An official exchange was held between NRAs, ENTSO-E and ACER to discuss those requests.

Based on the requests the TSOs proposed actions on how to tackle and/or answer each of the requests.

Eurelectric (Marie Bourrousse) asks if the list of requests by NRAs is public. ARERA clarifies that a public document is available which describes the reasoning behind each request.

Eurelectric (Marie Bourrousse) asks what TSOs plan to do on dimensioning and performances and what the list of measures to address LLEFD is.

ENTSO-E clarifies that an assessment of reserves activation will be done. LLEFD is not always easy to anticipate and prevent, need to check with other TSOs which actions are taken, what can be developed beyond what is existing and how they can be made available to the public.

COGEN Europe (Gunnar Kaestle) asked is FCR could be substitute to FRR if for instance, FCR is cheaper than aFRR. ENTSO-E clarified that FCR cannot bring back frequency to the nominal point. What TSOs are investigating is rather the risk of saturation of FCR and aFRR to consider a more rapid activation of mFRR.

7. Cybersecurity Network Code (NCCS) – Status Update

Felipe Castro Barrigon (EC) presents the NCCS process, the status of the legal review and the scope of applicability and of the content. The structure of the code is currently under review mostly in Title I and II. The legal review is taking a bit more time, alignments with other NCs is being done. For example, the Risk Monitoring Body and the Risk Working Group are being reviewed to align with the mandate given by the Electricity regulation.

The transitional period includes a number of tasks to be done during the first 3 to 12 months, depending on how long the tasks take. The timing is under review.

The unavailability of internet communication is not in the scope of the code.

8. AOB

- Geode (Mike Kay) presents a slide and asked how NC ER applies to aggregators as SGUs. Should aggregators have resilient communication with their contractors?

ENTSO-E (Rafał Kuczyński) clarifies that this question refers indirectly to art.24 of SO GL and that it will be taken to experts and bilateral discussion with Geode will be launched to follow-up on it. Geode (Mike Kay) agrees, but only partly as the focus is on critical tools and facilities which is more than just data. ACER asked to consider also 23.4.c of NC ER when bilateral meeting is held. Outcomes of the bilateral discussions will be provided to the SO ESC when available.

- Eurelectric (Thierry Vinas) asks about the incident of the Nordlink on the 17th of February 2023. There has been an inversion of the flow between Norway and Germany (from 1200MW to -400 MW) which triggered frequency imbalance in the Nordics. Is that under analysis at ENTSO-E?

ENTSO-E (Cherry Yuen) clarifies that if it is an ICS scale 2 event, a report will be drafted. Needs to be confirmed with the team if it falls under this scope.

- ACER (Uros Gabrijel) asks ENTSO-E to involve ACER as soon as possible on the set up of the Expert Panel in case it is identified an ICS scale 2 event.
- COGEN Europe (Gunnar Kaestle) asks about the trend of deterministic frequency deviations.

ENTSO-E (Cherry Yuen) clarifies that every 6 months an update on the mitigation measures was performed

Actions:

- ENTSO-E will investigate if the Nordlink event is an ICS scale 2 and inform ACER as well
- ENTSO-E will investigate the question on aggregators in NC ER and launch bilateral discussion with Geode
- ENTSO-E will present the next update on DFD at the meeting either in June or September