

19th System Operation European Stakeholder Committee (SO ESC)

06 December 2021, 13:30-16:00

Online meeting

Draft Minutes

Participants		
Uros	Gabrijel	ACER (Chair)
Eric	Dekinderen	VGB Powertech
Marie	Bourrousse	Eurelectric
Goran	Drobjnak	GE
Steffen	Eckstein	
Pavla	Erhartova	Europex
Florentien	Benedict	CEDEC
Jakub	Fijalkowski	DG ENER
Freddy	Alcazar	EUGINE
Ton	Geraerds	VGB Powertech
Gunnar	Kaestle	COGEN Europe
Klaus	Oberhauser	VGB Powertech
Andraz	Kordes	Europex
Andrea	Foschini	ENTSO-E / Terna
Rafal	Kuczynski	ENTSO-E / PSE
Lisa	Dallinger	BNetzA
Andreas	Luxa	Orgalime
Maria	Baroso Gomes	ACER
Mike	Kay	GEODE
Naomi	Chevillard	SPE
Luca	Ortolano	ENTSO-E / Terna
Marco	Pasquadibisceglie	ARERA
Laurent	Rosseel	ENTSO-E / RTE
Walter	Sattinger	ENTSO-E / Swissgrid
Thomas	Holzer	BnetzA
Thomas	Lewis	EASE
Torborg	Jevnaker	Observer
Uros	Gabrijel	ACER
Vasiliki	Klonari	WindEurope
Markus	Watscher	Eurelectric
Cherry	Yuen	ENTSO-E / Swissgrid
Daiga	Dege	ENTSO-E
Kacper	Kepka	ENTSO-E
Sarah	Soliman	ENTSO-E
Victor	Charbonnier	ENTSO-E
Eric	Dekinderen	VGB Powertech

1. Opening

1.1. Review of the agenda and approval of minutes

The Chair (Uros Gabrijel) opens the meeting. The agenda is confirmed and the minutes of the last meeting are approved.

1.2. Review of Actions

ENTSO-E (Cherry Yuen) introduces herself and presents the pending action. No comments.

2. Update on implementation actions at pan EU level

ENTSO-E (Cherry Yuen) presents the updates on the implementation actions.

CSAm amendments (Art. 21 & 27 SO GL):

Action: ENTSO-E to check the date of the workshop with Capacity Calculation Regions.

Transparency Platform:

ACER has submitted an opinion on the Manual of Procedures v3. This is to be reflected in the action list.

3. Cybersecurity Network Code

ENTSO-E (Andrea Foschini) provides an update on the drafting of the new Network Code on Cybersecurity. He provides the rationale for developing such regulation: cyberattacks are cross-sectoral threats, cyber threats are multiplying, the energy transition enlarges the cyber-attack surface.

He reminds about the general framework on cybersecurity at EU level which the network code will complement. A Working Group chaired by ENTSO-E and the EU DSO Entity will maintain a common electricity cybersecurity framework and ensure the implementation of risk management approach at Union level. Cybersecurity of the entire supply chain will be addressed through harmonised product and system requirement and verification.

Marc Malbrancke asks if the TSO-DSO working group created by the network code will be permanent. Andrea explains that the working group will be in charge of developing the tools for the implementation of the network code during a transition period. Afterwards, continuous exchanges will remain necessary.

Andrea then presents the timeline for the development and implementation of the network code. It will enter into force at the beginning of 2023. A public workshop will be organised on 8 December. Stakeholders' feedback will be addressed in a second version which will be submitted to ACER in February 2022.

COGEN (Gunnar Kaestle) asks if the drafting team is only made of system operators or if manufacturers are involved. Andrea confirms that the drafting team is only with TSOs and DSOs but explains that it is supported by a Drafting Committee composed of several stakeholders. Manufacturers such as T&D Europe are not part of it but coordination took place with this association.

Gunnar further invites the drafting team to consider the lessons learnt from other threats such as the cyber incident in Austria which affected the transmission grid in 2013. The consequent loss of ITC functionality was a severe event reported in the press. Uros mentions that this event was prior to the ICS methodology. Therefore there was no obligation to report. ENTSO-E can liaise with APG in case of specific questions about the incident but it is not ENTSO-E responsibility to analyse and report on cyber incidents occurred before the network code is established.

4. CGM Program

ENTSO-E (Markus Besser) announces that the CGM Business Process and ENTSO-E's Operational Planning Data Environment (OPDE) will go-live on 8 December 2021. The exchange of IGMs and CGMs will ease the cooperation between TSOs and result in an even more secure and cost-efficient pan-European grid. CGM Go-Live delivers the legal mandate as set out in CGMMs. The Go-Live has been delivered under the CGM Programme, a project led by TSOs and RCCs which was tasked with facilitating the pan-European exchange of network model data between TSOs and RCCs, as set out by the EU under various network codes. The CGM business process will serve as the basis for providing practical services according to the network codes, including short- and long-term capacity calculation, coordinated security analysis, outage planning coordination and short-term adequacy analysis. With the Go-Live, these services can initiate the migration to the Common Grid Model Exchange Standard (CGMES) and ENTSO-E's OPDE Platform.

5. Market triggered frequency deviations linked to variable RES generation

ENTSO-E (Walter Sattinger) explains that data of the Transparency Platform reveals incidents in Northern Germany strongly linked to the noise regulation which requires the immediate shut down of wind turbines in the evening. This is done within 10 seconds and therefore significantly impact the frequency of the system. In the future, if the problem exacerbates, the current control reserve at TSOs disposal would not be sufficient to compensate for the loss of these generators.

As next step, specific measurements of infeed generation at specific connection points with highly granular time resolution are required to support the analysis as data from SCADA and PMU are not sufficient. A possible mitigation would be to impose ramping requirements for power electronics interfaced generators. Such RoCoF requirements are already in place from certain generators to mitigate deterministic frequency deviations.

Walter further presents the timeline for delivering results of these analysis to the SO ESC (September 2022).

COGEN Europe (Gunnar Kaestle) suggests to create a new expert group with relevant TSOs in Germany, Denmark and Ireland to support this analysis with necessary data and discuss mitigation measures. Representatives from EPEX Spot could also be involved.

VGP Powertech (Eric Dekinderen) asks further question about the average frequency deviation for other DFD. Walter explains that frequency deviations due to DFDs are in the range of +/- 75 mHz. For comparison, operational rules were designed to cope with the loss of a big generator like a nuclear power plant which would lead to a +/- 40-50 mHz deviation. But now one can observe larger deviations several times a day especially in winter hours when demand peaks.

Laurent Rosseel explains that the current governance within ENTSO-E allows for the contribution of all synchronous areas.

ACER (Uros Gabrijel) acknowledges that ENTSO-E need to internally coordinate for this work, then a dedicated group can be created with stakeholders either under this ESC or as an ad hoc group. To be discussed at the next meeting.

Marie Bourrousse (Eurelectric) proposes Eurelectric to contribute to this discussion.

6. Report on the 24 July 2021 system separation in Spain, Portugal and southern France

ENTSO-E (Laurent Rosseel) explains analysis that was done under ENTSO-E to assess this incident. This implied a significant data collection effort. The incident was a scale 2 according to the Incident Class Scale methodology and therefore required the constitution of an expert group to investigate the root causes and propose recommendations in a public report.

Laurent further provides a description of the sequence of events. The incident was triggered by a fire under a cross-border line between France and Spain at a time of significant power flows between the two control areas.

An analysis was conducted for each line to describe the type of fault, the acting time of the protection, and the estimated location of the fault by dedicated fault location devices. The analysis proves that all line protections acted according to their settings and demonstrated their correct behaviour. Particular focus is given to the protection against loss of synchronism, as part of the defence protection scheme implemented by RTE and REE, that demonstrated the ability to protect the system, minimising the disturbances.

Coordination activities by the Regional Security Coordinators took place normally. The Critical Grid Situation Procedure was not triggered by TSOs. TSO-DSO coordination played an important role with regards to frequency plan and load shedding. Further analysis of the system defence plans of Portugal and Spain is nonetheless necessary due to the unintentional loss of generators during the process.

The Iberian Peninsula frequency was gradually brought back close to 50 Hz and the reconnection was effective within less than one hour. The analysis shows that the contingency analysis was well-tuned and implemented. Close coordination took place between RTE and REE. Amprion and Swissgrid in their role as Coordination Centres North and South and in their role as Synchronous Area Monitor in Continental Europe were responsible for the procedures and coordinated countermeasures. They were in contact with the affected TSOs right after the separation and regularly throughout the entire event. They kept all other TSOs informed throughout the event.

VGP Powertech (Eric Dekinderen) asks about:

- How the RoCoF calculation is done
- For how long the maximum voltage value was not respected
- If there were any damages on the grid or users equipment

Laurent explains that there were no damages related to the infringements of voltage limits. Walter Sattinger explains that the RoCoF should be distinguished depending on where it is measured. At the centre of inertia the RoCoF was not high compared to the RoCoF measured close to the lines of the disconnection. The measurement should therefore be done based on a sliding window of 500 ms to address this difference.

Gunnar reminds about grid incident in 2010 because of inappropriate synchrocheck settings of distributed generation which led to the tripping of several GW. In the aftermath, discussion took place in Germany between manufacturers, assets operators and system operators to revise underfrequency settings for large units connected to the medium voltage. Gunnar suggests that the lessons are learnt from this incident considering the similarity of the events. Gunnar and Eric invite ENTSO-E to consider the evaluation and evolution of these rules as part of the final report

7. Report on local grid incident in Poland

ENTSO-E (Rafal Kuczyński) explains what the situation in Polish electricity system was at the time of the incident. Reserves were available as required. No cross-border exchange was necessary in this respect. The intended operation was to switch the energised 400 kV line between Rogowiec and Oltarzew on auxiliary busbar but the switch did not fully close. The operator attempted to close it manually but closed the earthing switch instead of the auxiliary busbar disconnecter.

He then provides an overview of the system response after the incident and the restoration process to normal state. Over 3000 MW were lost in less than 3 minutes leading to a RoCoF of 158 mHz for less than 3 seconds. This increased flow on tie-lines. N-1 criterion was not fulfilled on Polish-German border for less than 20 minutes which was the time required for implementing remedial actions (coordinated phase shifter transformers tapping). No cascading threat or degradation of system threat was identified and reported by other TSOs. All available hydro power plants were activated into generation mode (1,700 MW within 20 minutes) and the coal and lignite power plants were also instructed to ramp up. The remedial actions and the emergency support from neighbouring TSOs enabled to avoid overload in transmission grid. The frequency deviation in Continental Europe was reduced within 17 minutes. PSE balance deviation of exchange reduced to +/- 500 MW within 20 minutes.

8. Tmin LER FCR

ENTSO-E (Luca Ortolano) informs that the proposal for minimum activation period for groups or units with large energy reservoirs (LER) providing frequency containment reserves was approved by ENTSO-E on 6 October 2021. A public workshop will be organised in January 2022. The date still needs to be aligned with NRAs. Luca invites stakeholders to provide the questions in advance of the meeting.

Luca further presents the content of the proposal:

- The minimum activation period required for frequency containment reserve providing units or groups with limited energy reservoirs to remain available during alert state is 30 minutes
- An interim period of at least 24 months following the entry into force of this proposal is provided
- The requirement in article 3.1 shall apply to LER whose prequalification takes place after the end of the interim period
- LER prequalified before the end of the interim period are not subject

Gunnar asks if the assumption behind the proposal is that mFRR is not able to ramp up in 30 minutes. Luca explains this is not the reason but it can happen that some regulation (secondary and tertiary) do not perform as expected so methodologies under development should also investigate these cases.

Action: ENTSO-E will share the invitation to the webinar to ESC members.

9. AOB

Meeting dates for 2022 will be:

- 3 March
- 14 June
- 22 September
- 1 December