

37th System Operation European Stakeholder Committee (SO ESC)

17 June 2026, 13:00 - 16:00

Location: Brussels

1. *Opening*

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

The meeting was opened by The Chair (Uros Gabrijel), who welcomed participants and confirmed connectivity of remote attendees. The agenda had been circulated in advance.

No additional items were proposed under AOB at the start of the meeting. The Chair confirmed that AOB would remain open for later additions. Gunnar KAESTLE (COGEN) later requested to include the deterministic frequency deviation as an AoB.

The minutes of the last meeting are approved.

1.2. Review of Actions

Cherry Yuen (ENTSO-E) presented the status of actions from previous meetings, confirming closure, ongoing status, or timeline updates for each item.

- The status of Deterministic Frequency Deviation (DFD) is confirmed as completed.
- CGM topic is removed as standing agenda item; updates to follow milestones only.
- ENTSO-E shares the link to request models for stakeholder's simulations. Link [here](#).
- SOGL 2.0 ENTSO-E paper: final version pending approval.
- Inertia Phase II: conclusions planned to be presented in October SO ESC meeting.
- Spain frequency deviation (Oct 2025): confirmed no incidents occurred.
- Frequency deviations >100 mHz: TSOs report through ICS; no single root cause identified due to interlinked drivers.

Clarification on Inertia Phase II report

The inertia Phase II project was discussed in terms of timeline and expected outputs. Nalan Buyuk (ENTSO-E) clarified what has been published and what is to come:

- Phase-1: Milestone I, 2023: <https://eepublicdownloads.blob.core.windows.net/public-cdn-container/clean-documents/sdc-documents/...>
- Phase-2 - Milestone II, 2025:
 - Position Statement: [ENTSO-E Position Paper Project Inertia – Phase II](#)
 - Supporting Technical Report: [Project Inertia phase II - Recovering power system resilience in case of system splits for a future...](#)
- Phase-3 - Milestone III, 2026, wrap up & conclusions: aimed to be published over the summer

Frequency Deviations

Stakeholders emphasised that frequency behaviour has not improved over time despite repeated attention to the issue. Several participants noted that the situation may have worsened in specific periods (e.g. spring / Easter). A key concern raised was that the current reporting via ICSm and ALFC is insufficient to capture the operational impact on generation assets.

Actions:

The Chair (Uros Gabrijel) invited the stakeholders, in preparation for the next meeting, to review the latest ICS methodology (ICSm) and ALFC reports in order to identify whether meaningful insights could be brought forward for discussion within the SO ESC. Participants were also invited to submit any specific questions in advance, enabling ENTSO-E to coordinate internally with the relevant experts and provide a comprehensive response at the next meeting.

Outage planning coordination

Cherry Yuen (ENTSO-E) highlighted an ACER recommendation regarding outage planning coordination, which requires TSOs and RCCs to coordinate outage planning with generation and demand facilities. She noted that, from an ENTSO-E and TSO perspective, optimising outage scheduling becomes challenging when it involves assets that are not directly owned or operated by TSOs. ENTSO-E expressed the interest in initiating a more in-depth discussion with stakeholders to better understand their views and to support the effective implementation of this recommendation.

Actions:

It was agreed to include this topic on the agenda of the next SO ESC meeting.

2. Update on the implementation actions at pan-EU level

Cherry Yuen (ENTSO-E) informed participants that the Expert Panel final report on the incident of May 2025 has been published.

3. Frequency related topic (Tmin LER for FCR provision)

Luca Ortolano (ENTSO-E) provided an update on the ongoing discussions regarding TminLER for FCR. The discussion focused on two key aspects:

- the treatment of the pre-alert period, not described under SOGL and its impact on LER energy usage;
- the determination of the appropriate Tmin value, considering technical constraints and CBA results.

It was explained that current LER designs already implicitly account for energy usage during the pre-alert period, which creates inconsistencies with the SOGL framework. A proposal was therefore discussed to differentiate between effective energy provision (e.g. 22.5 minutes) and a conventional pre-alert period (e.g. 7.5 minutes), while maintaining an overall energy dimension equivalent to 30 minutes of full FCR activation.

Stakeholders were informed that CBA results indicate that higher Tmin values would limit the increase in required total FCR volumes, while lower Tmin values (e.g. 15 minutes) could lead to a significant increase due to higher depletion risks.

Pasquidibiseglie Marco Pasquidibiseglie (Arera) further clarified that;

- no agreement was reached among NRAs within the legal deadline for the approval of the TminLER proposal;

- as a result, the decision-making competence has been transferred to ACER;
- ACER is expected to take a decision within the applicable legal timeframe (6 months).

Stakeholders raised questions regarding:

- the impact of the proposal on existing assets and potential retroactivity; (to be excluded as per the CBA's assumptions; ideally also for cases of FCR-requalification of existing assets)
- the assumptions and outcomes of the CBA methodology;
- the possibility of further stakeholder consultation during the decision-making process.

Luca Ortolano (ENTSO-E) clarified that the intention is to avoid retroactive impacts, with new requirements applying mainly to newly qualified units or upon requalification, potentially following an interim period aligned with existing regulatory approaches.

Action:

- ACER will communicate the next steps for the decision-making process.

4. Update from the DSO Entity

Florentien Benedict (DSO Entity) presents the update from the DSO Entity which focused on 3 main points.

- Overview- the need for the SOGL 2.0 revision and growing importance of distribution system operation. In the revision of SOGL, DSOs must be given the rights and responsibilities needed for the energy transition.
- DSO Entity's preliminary assessment of the SOGL 2.0, where DSO Entity has prepared a dedicated paper for ACER which includes 14 key points covering data, system operation and inclusion of new technologies.
- Deep Dives in key technical topics for DSOs which are already presented during the SO ESC workshop in May.

DSO Entity highlighted potential ambiguities and limitations in the current ICS framework, including:

- unclear interpretation of certain provisions related to scale 2 incidents affecting a single TSO, and the corresponding involvement of DSOs;
- lack of clarity in the definition and composition of the expert panel, including inconsistent terminology;
- limited and non-mandatory participation of DSOs in incident investigations, despite the increasing relevance of distribution-connected resources.

Based on recent incident analyses (including North Macedonia and Czech Republic incidents, as well as the Iberian blackout), it was noted that DSOs have not been systematically involved in expert panel investigations. DSO Entity stressed that this may limit the completeness of analyses, particularly given the growing role of distributed generation and system interactions at distribution level. Rainer Fronius (VGB Powertech) supported enhanced DSO involvement in incident investigations, highlighting the need for better visibility of distribution system behaviour and improved coordination between TSOs and DSOs.

DSO Entity further emphasised that:

- earlier and structured involvement of DSOs would improve the quality of incident analysis and recommendations;
- the current approach may create challenges for DSOs in assessing and responding to recommendations at later stages;
- DSOs are willing to actively contribute to the revision of the ICS methodology and to support improvements ahead of or in parallel with SOGL 2.0 developments.

Jakub Fijalkowski (European Commission) clarified that:

- the ICS methodology is a standalone methodology under the Electricity Regulation and not formally part of SOGL; and
- recommendations from expert panels may directly feed into ongoing regulatory developments (e.g. RfG 2.0), while further discussions remain open.

Concerns were also raised regarding the follow-up and governance of recommendations stemming from expert panel reports, including clarity on ownership, responsibilities and implementation timelines.

DSO Entity indicated that it sees a link between SOGL and the ICS methodology and will revert to this matter during the next SO ESC meeting.

Cherry Yuen (ENTSO-E) expressed concerns regarding the late circulation of updated presentation materials. She noted that the information had not been shared in advance, which limited stakeholders' ability to properly prepare and provide informed feedback during the meeting. It was therefore highlighted that additional time would be required for stakeholders to review the material and assess its implications.

In response, it was acknowledged that the topic had been previously raised, but that the level of detail presented during the meeting may not have been fully communicated beforehand. It was agreed that the discussion would need to be continued once stakeholders have had sufficient time to analyse the content.

Santiago Gallego Amores (EDSO) raised a question regarding the follow-up and monitoring of the recommendations included in the Iberian blackout final report. He noted that while some recommendations are being discussed within the SO ESC, it remains unclear how the full set of recommendations — including those assigned to multiple stakeholders — is being monitored and implemented, and which body is responsible for ensuring proper follow-up.

Cherry Yuen (ENTSO-E) clarified that a dedicated internal working group is in place to monitor the implementation of the recommendations assigned to the ENTSO-E, TSO, RCCs and to maintain an overview of their status. It was further indicated that the implementation involves multiple actors, including TSOs, DSOs, ACER and NRAs, and that ENTSO-E intends to regularly report on progress, including within the SO ESC.

Jakub Fijalkowski (European Commission) underlined the importance of establishing a clear and transparent governance framework for the follow-up of recommendations, particularly for those identified as high priority. It was highlighted that:

- recommendations, while not legally binding, create strong expectations for implementation;
- clarity is needed on responsibilities, ownership and timelines for each recommendation; and
- it remains to be assessed whether certain recommendations require regulatory amendments or “quick fixes” under existing frameworks (e.g. SOGL).

The discussion further emphasised the need for a coordinated and inclusive approach, given the number of stakeholders involved and the cross-cutting nature of the recommendations.

Action:

- ENTSO-E to organise a dedicated discussion involving the European Commission, ACER and DSO Entity to address governance aspects related to implementation of recommendations.
- Outcomes of this discussion to be reported back to the SO ESC.
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5. Discussion on R250428_11 from Iberian Blackout

Cherry Yuen (ENTSO-E) introduced the intention to initiate work on the implementation of Recommendation 11 from the Iberian blackout final report, focusing on the behaviour of non-observable embedded generation, in particular inverter-based resources.

It was highlighted that this topic is of high priority and that early stakeholder involvement is essential. ENTSO-E, after initial alignment with ACER, proposed the establishment of a dedicated expert group under the SO ESC, potentially in coordination with the Grid Connection ESC, to gather input and define appropriate solutions.

Participants supported the initiative and noted the importance of:

- ensuring coordination between TSOs and DSOs, given that most relevant assets are connected at distribution level;
- involving manufacturers, in particular inverter and small-scale equipment providers, to ensure adequate technical representation;
- clearly defining the objective of the work, including whether the focus should be on improving observability, device behaviour, or both.

Concerns were raised regarding the potential impact of additional requirements on small-scale generation, particularly in terms of cost and practicality, and the need to consider solutions based on device performance standards as well as system monitoring.

It was agreed that, at this stage, the focus should be on preparing the scope and structure of the work rather than entering into technical solutions.

Actions:

The following draft proposals will be presented at the SO CG meeting (18 June 2026):

- ENTSO-E and DSO Entity to jointly draft the Terms of Reference for the expert group;
- ENTSO-E and DSO Entity to consider launching a survey to gather stakeholder input to support the drafting process, including on scope and objectives;

- Draft Terms of Reference to be circulated ahead of the next joint ESC meeting, where the establishment of the expert group will be further discussed.

6. ACER update on SO GL2.0 work

Jan Kostevc (ACER) provided an update on the progress of the SOGL 2.0 policy paper, including outcomes from the recent stakeholder workshop and next steps in the process.

It was clarified that:

- the work is structured across two parallel policy papers: one on system operation (SOGL) and one on balancing;
- frequency-related aspects, including LFCR, will be primarily addressed in the balancing policy paper, while the SOGL policy paper will focus on broader system operation issues.

ACER presented an updated timeline, indicating that:

- a public consultation is planned for October 2026;
- publication of the final policy paper is now expected in Q1 2027, reflecting a more realistic timeline aligned with internal processes and coordination with NRAs.

ACER emphasised that the current phase focuses on:

- identifying key operational challenges (e.g. inertia, voltage control, observability, congestion and coordination across system levels);
- developing high-level solutions. Depending on the problem there might be several proposed policy options or one proposed solution.

The detailed regulatory amendments which will start later in the process once the EC recognises these problems and asks for ACER to come up with recommendation for amendments.

Stakeholders discussed several technical aspects, including:

- the role and assessment of inertia (rotating and synthetic) and fast frequency response (FFR);
- the need to maintain technology neutrality and avoid limiting future solutions;
- the importance of TSO-DSO coordination, particularly in view of increasing reliance on distribution-connected resources;
- considerations related to congestion management and observability, especially when integrating DSO-level resources into system operation and balancing processes.

It was also highlighted that:

- further technical and economic assessments are required to determine appropriate solutions;
- detailed regulatory proposals will be developed at a later stage, following the policy paper and subject to a formal mandate.

7. AoB - DFD

Gunnar KAESTLE (COGEN) provided an update on recent observations related to deterministic frequency deviations (DFD), highlighting developments identified notably in Germany. It was noted that, in addition to well-known sources of DFD (e.g. market-driven imbalances and effects linked to renewable generation patterns), a growing contributor appears to be the simultaneous shutdown of wind generation due to local regulatory constraints (e.g. noise-related curtailment during evening hours).

This type of coordinated behaviour was reported to result in recurring and predictable frequency deviations at specific times (e.g. around 22:00), and is increasingly considered a relevant operational challenge. It was suggested that mitigation measures such as ramping requirements or smoother operational constraints could help reduce the impact of such effects.

In response, ENTSO-E recalled that:

- DFD root causes and related mitigation measures are already covered in frequency quality reporting, including contributions from individual TSOs;
- previous work has been carried out to identify and assess various DFD sources across Europe.

Stakeholders were encouraged to consult existing Annual Load-Frequency Control (ALFC) Report reports to review identified causes and mitigation actions.

8. Closing

The Chair closed the meeting after all agenda items were addressed. Participants were informed about follow-up discussions and upcoming meetings.