System Operation European Stakeholder Committee

8 December 2025

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Reliable Sustainable Connected

Agenda

Subject	Timing	Lead
Lunch	12.00 - 13.00	
1. Opening • Review of the agenda, approval of last meeting minutes • Review of actions	13.00 – 13.15	Uros Gabrijel, ACER Cherry Yuen, ENTSO-E
2. Update on the implementation actions at pan-EU level	13.15 - 13.30	Cherry Yuen, ENTSO-E
3. Report on CGM implementation	13.30 – 13.45	Habir Paré, ENTSO-E
4. Frequency related topic (FCR probabilistic dimension and Tmin LER for FCR provision)	13.45 – 14.00	Luca Ortolano, ENTSO-E
5. Updates from the DSO Entity	14.00 – 14.10	Florentien Benedict, DSO Entity
Coffee Break	14.10 – 14.25	
6. Iberian Peninsula Incident Investigation	14.30– 15.00	Klaus Kaschnitz, ENTSO-E Richárd Balog, ENTSO-E
7. North Macedonia Incident Investigation	15.00 - 15.15	Ana Cigaran Romero
8. Czech Republic Incident Investigation	15.15 - 15.30	Donatas Matelionis
9. AOB • Next meeting	15.30 – 15.45	

1. Review of actions

ENTSO-E, Cherry Yuen

TOP. 1 - Review of actions SO ESC

ACTION	Comments	STATUS
ENTSO-E will present the next update on DFD at the meeting of September.	Materials to be provided separately after RGCE approval. This should be ready for March 2026	Ongoing
Implementation of Art.39 of SO GL and follow-up of RoCoF discussion: ACER will liaise with GC and SO ESC members to establish the Terms of References of the new Expert Group (topic: a macro-economic study is provided by TSOs for adapting system operators to a net zero emissions power system)	EC will initiate a consultation on a forthcoming study which the new EG under GC and SO ESC will aim to support.	Ongoing
ENTSO-E to consider the question on the different voltage limits in the Baltic States and provide insights in the next SO ESC meeting.	Answer provided during Sept meeting.	Done
DSO Entity to share the report on Grid Forming reflecting the track changes.		Done

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

ENTSO-E, Cherry Yuen

Pan-European or regional deliverables 2024: SOGL/NCER

SO GL (Article 15)	Annual report on operational security indicators (for year 2024) published - link
SO GL (Article 16)	Annual report on load-frequency control (for the year 2024) published - link
SO GL (Article 17)	Annual report on regional coordination assessment (for year 2024) published - link

3. Report on CGM implementation

Habir Paré Nsangou, ENTSO-E

Achievements, Challenges and on-going actions

Main achievements during the period (August 2025 – November 2025)

1. **CGM action plan**:
   i. TSOs alignment on the usage of market schedules (to minimize need for scaling and reduce the respective issues).
   ii. Approval of Business Requirements Specification for Operational Planning Data environment (OPDE) 2.0. Next step is launching the re-architecture phase.
   iii. Harmonization of power flow settings by defining five sets of settings to improve comparability, validation, and model quality.
   iv. Fix of known OPDE issue.
2. **CGM completeness and TSOs/RCCs Inter-Operability Sessions:**
   i. General increase of the CGM publication and completeness compared with previous reporting period.

Challenges (August 2025 – November 2025)

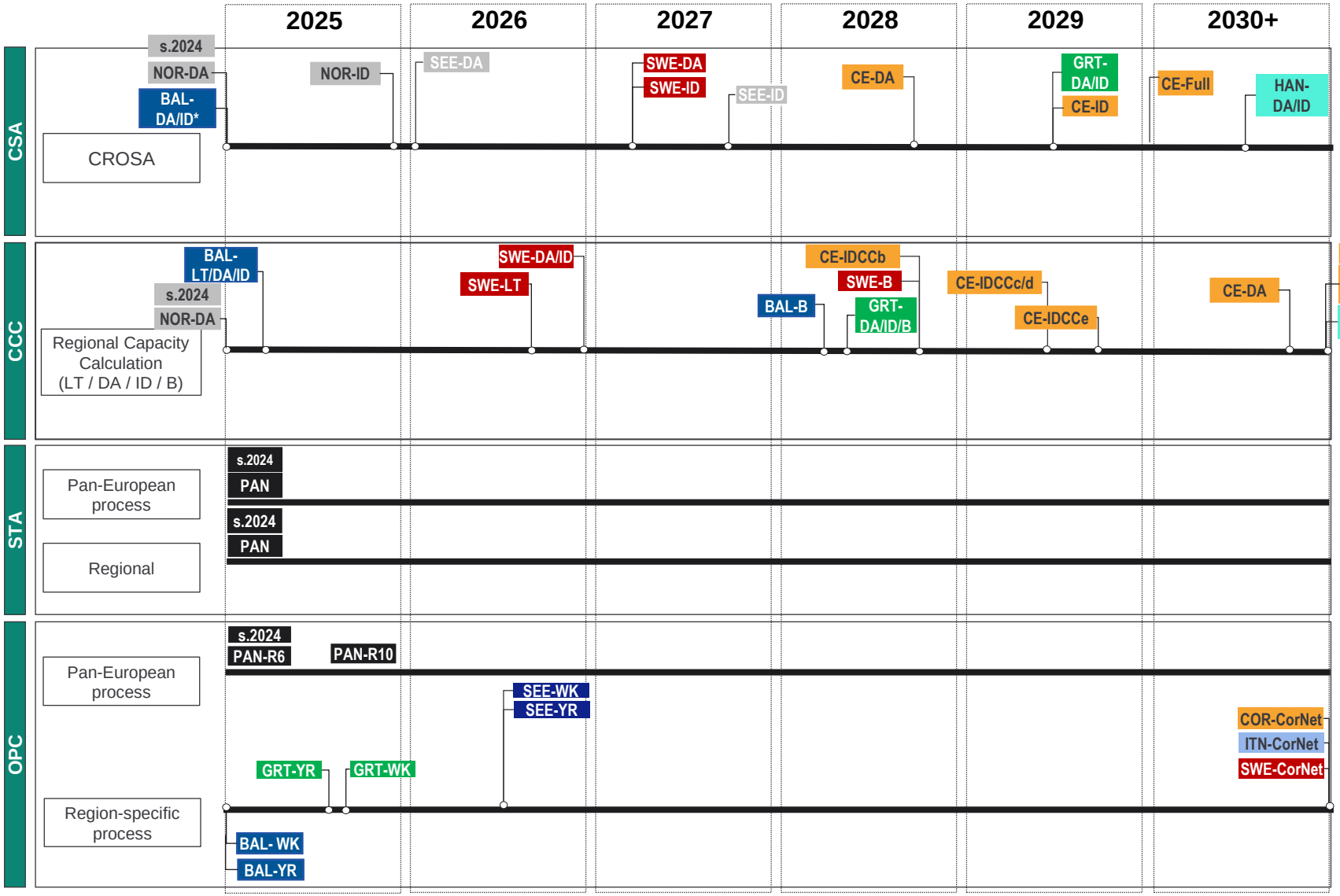
1. Low OPDE performance irrespective of the release version limiting the operational readiness of the CGM building process.
2. Misalignment on regard of tools parametrisation and inputs reference to consider.

On-going actions (August 2025 – November 2025)

1. Dedicated work on EMF benchmarking tasks (e.g. harmonising load flow parameters, replacement strategy).
2. Assessment on inputs references to be considered while limiting the quality impact.

Capacity Calculation Regions – Roadmap for go-live of CGMES based tasks

Last update November 2025



TIMEFRAMES

LT = Long Term (YR, MO)
YR = Year-Ahead
WK = Week-Ahead (3D to 7D)
2D = Two days-ahead
DA = Day-Ahead
ID = Intraday

REGIONS

BAL = Baltic
COR = Core
CE = Central Europe
GRT = GRIT
HAN = Hansa
ITN = Italy North
NOR = Nordic
PAN = Pan-European /common delivery
SEE = South East Europe
SWE = South West Europe

NB

- Nordic CSA-based simplified version without RAO; full ROSC scope to be added later; Nordic IGMs in CGMES, not on OPDE
- CSA HAN-DA/ID go live date within 12 months after respective Go-Live in Core & Nordic CCR
- HAN DA/ID CC within 12M after application of pan-European DA/ID CGM in CGMES format in Hansa ROSC
- CE stepwise DA/ID CROSA go-live is subject to the decision whether there will be a go-live with DA CROSA only
- ITN to be merged with Core to form CE.
- SEE in the process of defining a new timeline.
- Pan-EU STA does not rely on CGMs in CGMES.
- OPC PAN-R10 - Next evolution of CIM/CGMES migration on Pan-EU level, starting with //run and switch of underlying data format

4. Frequency related topics

Luca Ortolano, ENTSO-E

FCR probabilistic dimensioning

- On 17 January 2025, the **CE NRAs approved** the proposal by the CE Transmission System Operators (TSOs) for **probabilistic dimensioning of Frequency Containment Reserves (FCR),** in line with Article 153(2) SO GL.
- The approval process at national level was completed on 3rd October 2025.
- As also foreseen in the approved methodology, after the finalization of the national approval process by the CE NRAs, the CE TSOs have organized a series of meetings with the NRAs to further discuss the topic of probabilistic FCR dimensioning, as well as TminLER topic.
- The PT TminLER and Probabilistic FCR Dimensioning is conducting the activities for the **implementation of the methodology**.

5. Update from the DSO Entity

Florentien Benedict, DSO Entity

DSO ENTITY
DSOs FOR EUROPE

Overview EU DSO Entity
ESC SO 8th December 2025

Florentien Benedict / Tony Hearne
EU DSO Entity

Agenda

1. **ICS Methodology- Update on the response from DSO Entity**
2. Task force Iberian black out
3. Short updates on - Guidance for DSOs on Grid Forming Roadmaps

ICS Methodology- Update on the response from DSO Entity

- Asked for some explanations
- Some minor typos
- Some editorial problems

ICS Methodology- Update on the response from DSO Entity

- Replace the criteria for the loss of load for the CE/IE/Nordic synchronous areas as below:
- Scale 0: ≤ 1%
- Scale 1: 1% - 5%
- Scale 2: >5%

ICS Methodology- Update on the response from DSO Entity

- The criterion for loss of load does not treat the effects of this sufficiently seriously
- A single TSO may lose 9% of its load but this could be 100% of a single DSO supplied by that TSO.
- In addition, the total demand to customers can be much greater than that supplied by the TSO, because of the contribution from DSO connected generation. This criterion risks understating the real effect on customers and the economy.

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ICS Methodology- Update on the response from DSO Entity

- Include “a representation of DSOs”
- Add affected DSO
- DSOs must be involved

- Processed in several articles, for example:

  The report is prepared by an ICS Expert Panel consisting of:
  - representatives of affected DSOs,
  - representative(s) of unaffected DSOs

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ICS Methodology- Update on the response from DSO Entity

- It is not clear why the relevance of the requirement on DSO unbundling is
- All DSOs have to conform to EU and national regulation regarding independence and equal treatment of all parties. Our suggested revised text does not include this requirement as we believe it is inappropriate.

Agenda

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2. **Task force Iberian black out**
3. Short updates on - Guidance for DSOs on Grid Forming Roadmaps

Task force Iberian black out

- EU DSO Entity raised the Task Force Iberian black out
- Experts from affected DSOs and non-affected DSOs
- Discussion partner for the Expert Panel
- Many questions are asked by the Expert Panel
- Task force DSO entity tries to answer the questions and present the results
- Willing to contribute to recommendations for the NC DC, NC RfG and SOGL

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Agenda

1. ICS Methodology- Update on the response from DSO Entity
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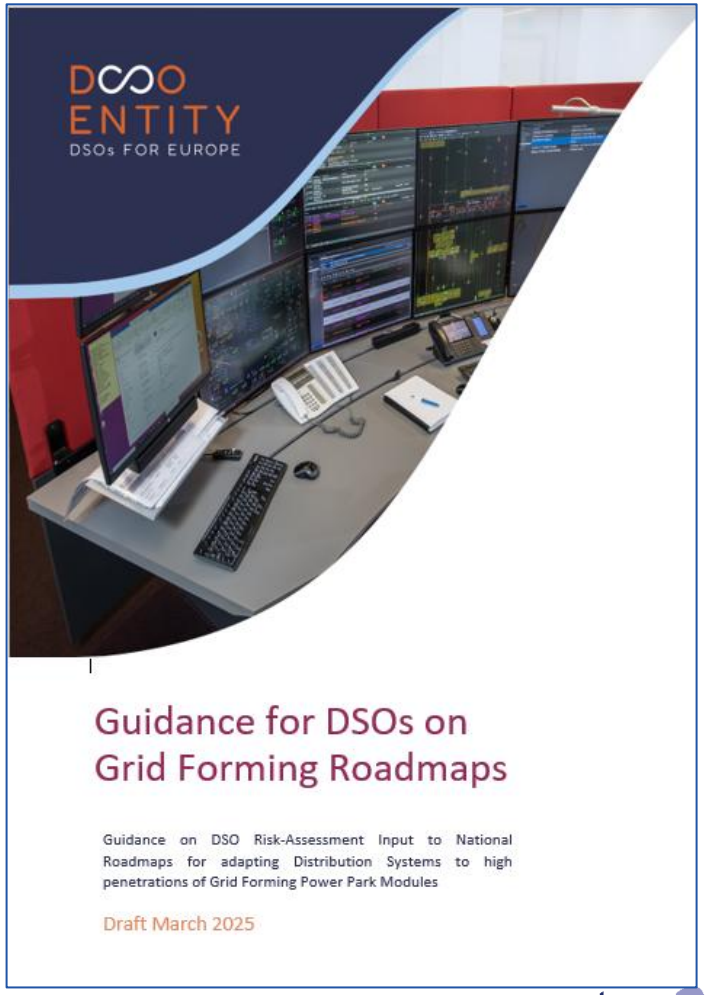
3. **Short updates on - Guidance for DSOs on Grid Forming Roadmaps**

Guidance for DSOs on Grid Forming Roadmaps

- Document now approved by DSO Entity Board of Directors.
- In the context of dissemination to target audiences, we have created a slide pack for the purpose.
- We are available to present this at any suitable forums.



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DSO ENTITY
DSOs FOR EUROPE

Thank you for your attention
Questions?
Please contact us!

6. Iberian Peninsula Incident Investigation

Klaus Kaschnitz, Richard Balog, ENTSO-E

Expert Panel Investigations: two key deliverables

01 – Factual report

- Presents the facts and data on the incident
- Does not include analysis nor recommendations
- Legal deadline for the factual report: 6 months after the incident
- The Expert Panel intends to deliver the factual report earlier than the legal deadline

❑ **Spain and Portugal blackout** – Factual Report published on **3 October 2025**

02 – Final report

- Is prepared on the basis of the Factual report
- Includes a detailed analysis of the incident
- Includes a list of recommendations to be implemented in order to prevent similar incidents in the future
- Is expected to be delivered few months after the factual report

❑ **Spain and Portugal blackout** – Final Report planned for **Q1 2026**

Development of the Final Report

Topic	Leadership
Oscillations	Terna
Voltage Control	ACER
Disconnections	Mavir
Reserves and system defense plans	Terna
Restoration	Elia
Operational planning	Selene CC
Root cause tree	Elia
Comparison with past recommendations	Swissgrid

28 April 2025

Preliminary timeline for Final Report Development

Mid-point

- Publication of Factual Report
- Presentation to numerous bodies and stakeholders
- Alignment on future topics to be developed in final report
- Organisation of work and planning

Report development

- Finalisation of analysis: oscillations
- Finalisation of analysis: restoration
- Finalisation of analysis: analysis of past recommendations

Report development

- Finalisation of analysis: operational planning

Report development

- Finalisation of analysis: disconnection
- Finalisation of analysis: reserves and system defence plans
- Finalisation of analysis: root cause tree

Finalisation and publication

- Publication of final report by end of March 2026

Implementation of recommendations

- Planned to commence as soon as report is finalized

7. North Macedonia Incident Investigation

Ana Cigaran Romero, ENTSO-E

Update on 18 May 2025 Scale 3 incident

Incident Overview

On 18 May 2025, at 04:59 CEST, the power system of North Macedonia **experienced a separation between the 400 kV and 110 kV transmission networks due to overvoltage**. This event led to a full blackout in the 110 kV network, which resulted in the loss of approximately 79% of the total load in the country.

Affected TSOs:
MEPSO (North Macedonia), **ESO EAD** (Bulgaria), **EMS** (Serbia).

Incident Classification:
ICS Scale 3 Incident for MEPSO and **ICS Scale 1 Incident for ESO EAD and for EMS**.

Preliminary Cause:
Initial observations indicate **high voltages on the 400 kV network**, combined with **low consumption and very low cross-border power** flows with neighbouring TSOs.

Factual Report:
The report has been published on **10 November 2025** (link to report)

Final Report:
To be published in **Q1 2026**

18 May 2025

Focus areas for the final report

Root causes

Determine and analyse the root causes and contributing factors to the incident, including identifying any common causes with previous incidents

Voltage Control

- Interpreting the 2024 incident's voltage control recommendations
- Assessing how existing operational planning procedures are applied
- Evaluating the feasibility and adequacy of short- and medium-term countermeasures for high voltages;
- verifying compliance with RES connection requirements.

MEPSO Defence Plan

Updates might be needed in light of current operational challenges, especially regarding the TSO–DSO interface on automatic load shedding and voltage management coordination

Tools

Improvements how measures/tools are used to inform TSOs about system conditions, especially in an emergency state.

8. Czech Republic Incident Investigation

Donatas Matelionis, ENTSO-E

Progress on 4 July 2025 incident in Czech Republic

Status:

Factual report is prepared and is in the final approval stage

Progress :

September 17 – initial information about the incident presented to SO ESC
September 26 - Expert panel kick off

October-November - Factual report was drafted and reviewed by Expert panel

Data collection:

- Information from CZ certified laboratories regarding failure of conductor was received. Technical reasons of the failure will be provided in the Factual report
- Data requests were issued for the DSO and power plant operator

- No neighboring TSOs have been impacted
- Incident was classified as Scale 2 criterion L2 based on ICS Methodology (Loss of <50% consumption)

Progress on 4 July 2025 incident in Czech Republic

Next steps:

Mid December – publication of the Factual report

Preparation of Final report:

- The Expert Panel has issued additional data requests. Additional responses and information will be included in the Final report.
- Scope of Final report based on ICS methodology:
    1. The analysis on the causes of the incident;
    2. The evaluation of the activated remedial actions and measures from system defense plan;
    3. The evaluation of the actions of TSO employees in charge of real-time operation of the transmission system;
    4. The description of the functioning of the network element(s);
    5. The conclusions and the explanations of the reasons for the incident;
    6. The recommendations based on the conclusions of the investigation.

- The Final report expected to be prepared latest by September 2026.

7. AOB

2026 meeting dates

- March 3 – SO ESC pm – hosted by ACER
- March 4 – GC ESC – hosted by ACER

- June 17 – SO ESC pm – hosted by DSO Entity
- June 18 – GC ESC – hosted by DSO Entity

- October 6 – GC ESC – hosted by ENTSO-E
- October 7 – SO ESC am – hosted by ENTSO-E

- December 8 – SO ESC pm – hosted by ACER
- December 9 – GC ESC - hosted by ACER