ENTSO-E Annual Work Programme 2027

Public webinar

25 September 2026, 15:00-16:30 CEST

CONNECTING EUROPE,
ELECTRIFYING THE FUTURE

Organisational details

Webinar planning: approx. 1.5 hours
Interactive (Q&A)

Recording/streaming is needed to ensure transparency. If you object, please let us know.

All participants must stay muted when not speaking.
Speak only when given the floor by the moderator.

All questions and comments in MS Teams will preferably be addressed during the webinar via the Q&A session after each topic. If any questions remain open, they can be addressed offline on a bilateral basis.

Participants can raise their hands after each topic to ask a question or make a comment.
The moderator will give you the floor.

Agenda

Topic	Lead	Time
❖ Welcoming participants ❖ AWP 2027: Introduction (new structure, rules, focus, status)	• Eva Marie Kurscheid • Rafael Carnicero Mazon	15:00 -15:10
1. Initiatives to ensure system security	• James Hellinckx / Gonzalo Morollon Castro / Ron Wibbelink	15:10-15:20
2. Grid Development and Grid Connections	• Juan Giner Folques /Gonzalo Morollon Castro / Ludivine Marcenac	15:20-15:35
3. Adequacy and Flexibility	• Juan Giner Folques / Gonzalo Morollon Castro / Ludivine Marcenac	15:35-15:45
4. Operations of the future power system	• James Hellinckx / Gonzalo Morollon Castro	15:45-16:00
5. Market integration and Market transparency	• Ludivine Marcenac	16:00-16:10
6. Leveraging Innovation for Grid Development	• Gonzalo Morollon Castro / Michele Dion-Demael	16:10-16:20
❖ *General feedback and closing*		16:20-16:30

Welcoming Participants / AWP 2027 Introduction

Annual Work Programme 2027: Introduction

ENTSO-E Annual Work Programme (AWP) 2027 is open for public consultation until 23 October 2026

Overview

- ENTSO-E publishes every year an Annual Work Programme as required under REGULATION (EU) 2019/943 on the internal market for electricity.
- AWP focuses on the legally mandated tasks given to Transmission System Operators (TSOs) and the European Network of TSOs (ENTSO-E) directly by European Union (EU) Regulations, Directives and Network Codes and Guidelines as well as the related terms and conditions or methodologies.

Why your views matter

- The elaboration of the Annual Work Programme – 2027 and its successful implementation hinges on the input provided by our stakeholders.
- Your comments are valuable to us in order to improve the draft found in the open public consultation.
- AWP team will provide feedback to those who provided comments.

Public consultation open on ENTSO-E's consultation hub until 23 October 2026

Consultation on the ENTSO-E Annual Work Programme 2027 - European Network of Transmission System Operators for Electricity - Citizen Space

Annual Work Programme 2027 – High-Level Timeline

AWP 2027 preparation foresees a consultation approach and approval process

Draft AWP 2027 list & text: January - August 2026

January - April

AWP list of tasks and text development
Committees reviewed the draft list

April - June

Update of AWP 2027 list & text

June - August

Draft AWP 2027 list & text finalised
Preparation for public consultation

Final AWP 2027 and publication: September - December 2026

September

23 Sep: consultation approval
25 Sept: public consultation opens (25 Sept – 23 Oct)
25 Sept: AWP public webinar

October

23 Oct: public consultation closes
End October: final internal approval

Nov - Dec

Nov: submission to ACER

Dec: publication of the final AWP 2027

Presentations and Q/A

1. Initiatives to ensure system security

Key activities in 2027 | System Operations Committee · Research, Development & Innovation Committee · Information and Communication Technologies Committee

James Hellinckx / Gonzalo Morollon Castro

Operational security, stability and cooperation

System Operations Committee · Research, Development & Innovation Committee

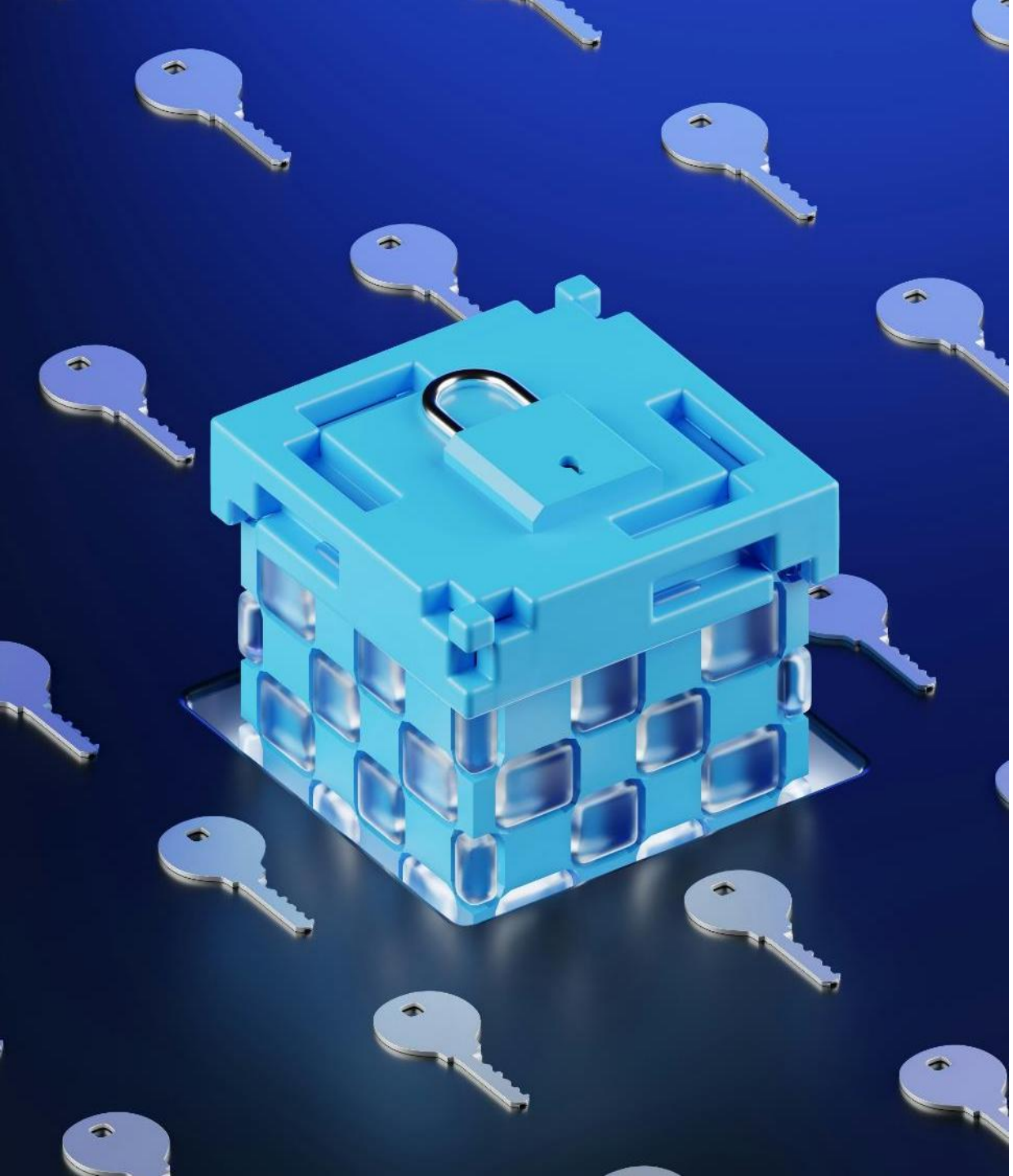
Risk Preparedness, emergency restoration & system security

- Preparations for **regional electricity crisis scenarios** with close engagement with stakeholders
- Coordinating the **Network Code Emergency and Restoration** (NC ER) implementation and revision
- Support TSOs to **ensure security of supply and to protect the power system against physical, cyber and hybrid threats**.
- Monitoring and supporting **implementation of the recommendations from Expert Panel investigations**
- Develop the **probabilistic risk-assessment methodology** under the Methodology for coordinating operational security analysis (CSAm)
- Publishing **annual reports** on the operational security indicators, **Incident Classification Scale (ICS) and Load Frequency Control (LFC)** under SO GL.

Stability Management and Future System Security

Develop a **10-year, pan-European roadmap** for stability management, linking current challenges to future system needs.

- Aligning **TSO requirements, R&D priorities and ENTSO-E coordination** across national, synchronous-area and European levels.
- Map key stability challenges, technology maturity and expected milestones.
- Identify priority R&D gaps and potential **Horizon Europe opportunities**.



Ron Wibbelink

Network Code on Cybersecurity (NCCS) 2027: Key Deliverables and Expected Outcomes

Drafting of the **Union-wide Risk Assessment Report** → Performing Union-wide cybersecurity risk assessments

Develop sets of non-binding **cybersecurity procurement recommendations** on SCADA systems, on Intelligent Electronic Devices (IEDs)

Supporting stakeholder involvement in the **Cybersecurity European Stakeholder Committee**, chaired by ACER and supported by ENTSO-E and DSO Entity

Union-Wide Risk Assessment in 2027

Risk-impact matrix

Electricity Cybersecurity Impact Indices (ECII) and thresholds

Minimum and advanced cybersecurity controls

Risk Assessment Guidance

2. Grid Development and Grid Connections

Key activities in 2027 | System Development Committee · Research, Development & Innovation Committee · Market Committee

Ten-Year Network Development Plan (TYNDP)

System Development Committee

TYNDP 2028

Continue the development of the joint TYNDP 2028 scenarios with ENTSOG and ENNOH for submission to the EC, ACER and Member States in early 2028:

- Release the TYNDP 2028 stakeholder engagement plan for consultation early in 2027
- Focus on system needs and offshore network development plan, and work on methodological advancements ahead of 2028 delivery
- Develop the CBA implementation guidelines for TYNDP 2028 and start preparatory CBA on candidate projects
- Apply the cross-benefit and cost-sharing mandate to TYNDP 2026 results and to the non-binding Member State agreement on offshore renewables

Connection Network Codes (CNCs)

System Development Committee

CNCs Amendment

- Support ACER and the European Commission on adoption and national implementation of the amended CNCs: NC RfG, NC DC and NC HVDC
- Draft, publicly consult and publish implementation guidance documents (IGDs) to support the national implementation of the amended NC RfG on topics such as grid-forming, forced oscillations and LFSM
- Develop IGDs to support the national implementation of the amended NC DC on topics such as heat pumps, power-to-gas, and electric vehicles
- Co-organise with EU DSO Entity the four annual Grid Connection European Stakeholders Committee (GC ESC) meetings chaired by ACER
- Submit the annual NC RfG and NC HVDC implementation monitoring data from TSOs and DSOs to ACER by end of June 2027

Juan Giner Folques / Gonzalo Morollon Castro

Supply chains, connections and permitting

System Development Committee · Research, Development & Innovation Committee

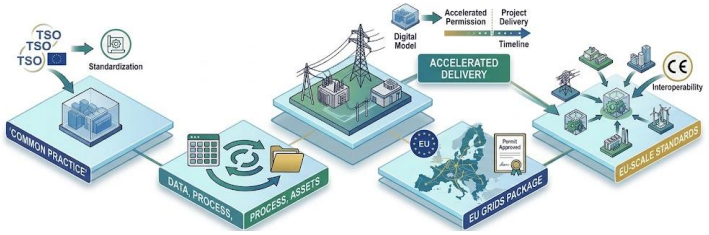
Grid infrastructure strategy

- Build on the 2026 public procurement position to feed EU work on procurement rules, and the industrial accelerator and circular economy acts.
- Consider Grids Package guidance on efficient connections and data collection on grid connection queues.
- Support implementation of the new permitting and revised TEN-E under the Grid Package.

Common BIM Practices and TSO BIM Framework

Establish a common TSO practice for Building Information Modelling

- Develop a framework for common data structures, processes and digital assets.
- Explore how BIM can accelerate **permitting and infrastructure delivery**.
- Support digital permitting objectives under the **EU Grids Package**.
- Identify opportunities for European-scale standardisation and interoperability.



Ludivine Marcenac

Economic regulation and finance

Market Committee

Inter TSO Compensation (ITC) Mechanism

- Agreement between ENTSO-E and member TSOs
  - Single framework for compensating TSOs for costs associated with hosting transit flows.
- Transit Losses Data Report 2010/838 and Perimeter fee:
  - Annual report on transmission losses incurred on the transmission system.

Tariffs and Financeability

- During 2027 ENTSO-E will:
  - Publish the annual overview of transmission tariffs
  - Propose amendments to the congestion income distribution methodology
  - Continue to provide input to the EU Grid Action Plan Action 8 on tariffs design and implementation.
- ENTSO-E's Finance Advisory Group will continue raising awareness of TSOs financial challenges and opportunities in 2027.

3. Adequacy and Flexibility

Key activities in 2027 | System Development Committee · Research, Development & Innovation Committee · Market Committee

Seasonal outlooks / European Resource Adequacy Assessment (ERAA)

System Development Committee

Summer 2027 and Winter 2027-2028 Outlooks

Publish the Summer Outlook 2027 by 1 June 2027 and the Winter Outlook 2027-2028 by 1 December 2027:

- Apply the ACER-approved probabilistic methodology using data collected from TSOs
- Assess pan-European security of electricity supply ahead of each season
- Identify when and where system adequacy is at risk across the interconnected system
- Pair each outlook with a review of what actually occurred during the previous season

ERAA 2027

Submit the ERAA 2027 package for ACER's approval in November 2027:

- Cover study findings, process, input data, main assumptions and methodological advancements
- Assess whether the system has sufficient resources to meet demand over the coming decade
- Start implementing the amended ERAA methodology from ERAA 2027, following the 2026 implementation plan

Flexibility needs assessment

Research, Development & Innovation Committee

Support the second cycle of the national Flexibility Needs Assessment (FNA)

Prepare with TSOs for the **second FNA implementation cycle beginning July 2027**

- Provide continuous support on methodology-related questions. Maintain and update the relevant **FNA Q&A**.
- Capture first-cycle implementation experience, challenges and solutions (incl. considering methodology amendments where necessary).
- Coordinate with the **DSO Entity** on common assumptions and target years.
- Continue structured engagement with **ACER and other EU stakeholders**.

Role and impact of long-duration energy storage

- **Assess the system role of LDES:** Contribution to adequacy, renewable integration, flexibility and resilience, particularly during prolonged low-renewable periods.
- **Assess technologies and system value:** Compare technology maturity, performance, costs and potential system benefits of different LDES solutions.
- **Identify barriers and implications for TSOs:** Assess regulatory and market barriers and translate findings into implications for ERAA, TYNDP and flexibility assessments, providing a common TSO perspective.

Ludivine Marcenac

Network code on demand response

Market Committee

NCDR Background

- ACER submitted Recommendation 01/2025 to the EC proposing NC DR
- EC ran targeted stakeholder consultation in 2025
- **ENTSO-E, with EU DSO Entity, to support adoption and implementation from 2027**

Effects on Guidelines and Codes

- NC DR-related amendments to EB GL, SO GL, Connection Codes
- ENTSO-E to flag issues needing EU-level action under existing methodologies
- **Ensure consistency between NC DR and other EU codes/guidelines**

Effects on Frameworks

- Balancing legal/regulatory frameworks expected to need amendment in 2027
- Affects on Imbalance Settlement Harmonization (ISHM), mFRR & aFRR Implementation Frameworks
- **ENTSO-E/TSOs to engage stakeholders throughout for feedback and transparency**

4. Operations of the future power system

Key activities in 2027 | System Operations Committee · Research, Development & Innovation Committee

James Hellinckx / Gonzalo Morollon Castro

System operation and situational awareness

System Operations Committee & Research, Development & Innovation Committee

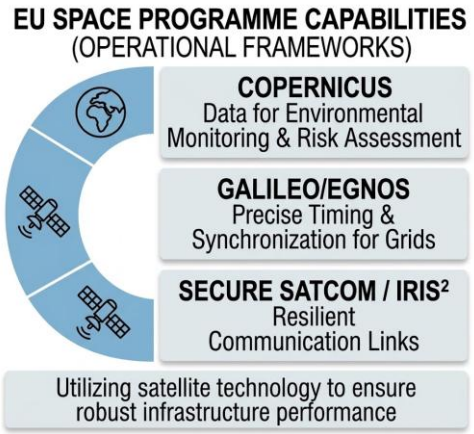
System Operation Guidelines (SO GL)

- Ensure consistency between SO GL and other network codes and guidelines.
- Preparing for revision of the SO GL, ensuring that European regulation remains fit to safeguard operational security in a new energy landscape (e. g., with the integration of large volumes of renewable generation and storage and growing electricity use).
- Propose relevant regulatory and methodological amendments related to the SO GL and underlying methodologies such as the Methodology for coordinating operational security analysis (CSAm) and the Common Grid Model (CGM) methodology.

EU Space Programme Capabilities to enhance TSO's Resilience

Translate TSO use cases into EU Space Programme capabilities (Copernicus, Galileo/EGNOS, secure SATCOM/IRIS²) operational frameworks in cooperation with EC, EUSPA and ESA that moves from pilots towards functional hubs that are accessible to all TSOs to:

- strengthen grid resilience against physical and space-weather threats.
- improve situational awareness and operational capabilities.
- identify opportunities to improve security, regulatory preparedness and operational efficiency.



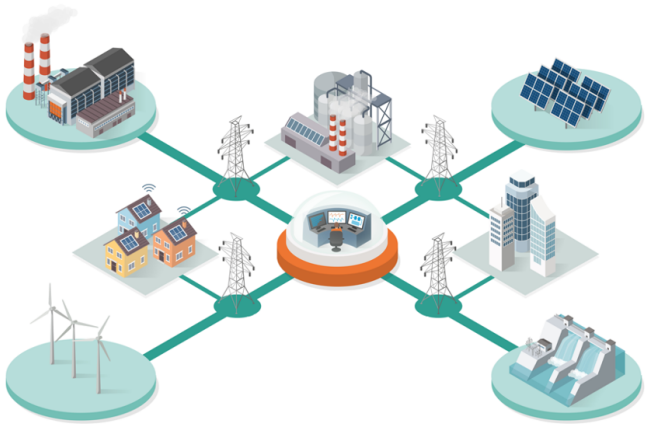
James Hellinckx

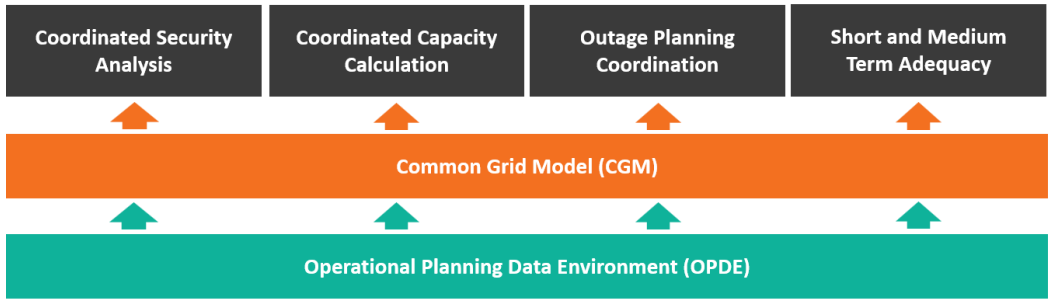
Common grid model and OPDE

System Operations Committee

Common Grid Model (CGM) and OPDE

- **CGM** and **Operational Planning Data Environment (OPDE)** ➔ key enablers of operational coordination & security of supply at European level.
- **Individual Grid Models (IGMs):** provided by TSOs via OPDE to **RCCs**, who merge these into a **CGM** (timeframes from one year to one hour before real time).
- **CGM: key input for tasks delivered by Regional Coordination Centres** (e.g CCC or CSA).
- **In 2027**, focus on
  - Delivering a ***fit-for purpose CGMs*** for as input for pan-European and regional RCC tasks, with the support of the CGM action plan under System Operations Committee guidance.
  - Building a new **OPDE 2.0 platform**





Digitalisation and artificial intelligence

Research, Development & Innovation Committee

Digitalisation, AI and Resilient Control Centres for the Future Power System

- **Advance AI as a trusted TSO operational tool**, focusing on high-value use cases, decision support and predictive/adaptive operations.
- **Develop a governance framework for a pan-European foundational power-system AI model**, ensuring data governance, security, validation, accountability and alignment with the EU AI Act.
- **Advance in establishing common European methodologies, requirements and validation approaches** so that TSOs can adopt emerging digital and AI technologies efficiently and securely.
- **Strengthen real-time observability and Dynamic Security Assessment (DSA)** through WAMS/PMU integration and improved use of operational data.
- **Strengthen Digital Twin capabilities** for enhanced real-time observability.
- **Enable vendor-agnostic and interoperable future control centres**, based on common capabilities, modular architectures and reduced vendor lock-in.
- **Strengthen resilient timing and communications**, including alternatives to GNSS and integration of EU Space Programme capabilities.

5. Market integration and Market transparency

Key activities in 2027 | Market Committee

Ludivine Marcenac

Forward capacity allocation

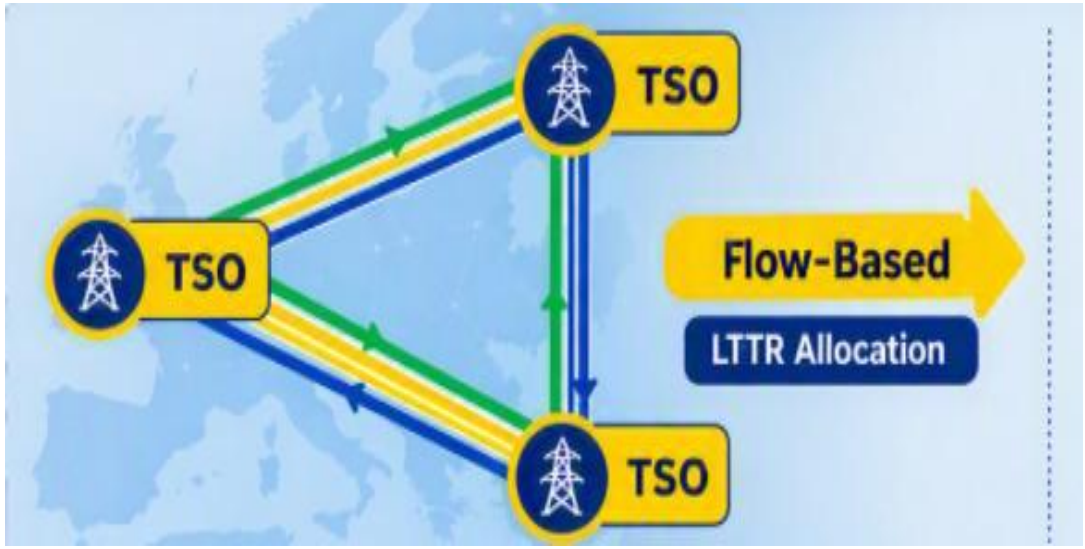
Market Committee

Review the harmonised allocation rules and single allocation platform methodologies

- Long Term Flow Based Go-Live in November 2026
- Continue implementing the improved collateral solution with TSOs and JAO, likely requiring a further review of the allocation rules
- Continue long-term flow-based allocation in the Core and Nordic capacity calculation regions after the November 2026 go-live

Future of the Forward Capacity Allocation

- Analyse the Commission impact assessment and FCA 2.0 draft, and start implementation once the amended regulation is in force



Ludivine Marcenac

Capacity allocation and congestion management

Market Committee

Current framework

- Support all TSOs in assessing results of the congestion income distribution methodology
- Prepare and submit the annual CACM cost report on day-ahead and intraday market coupling costs
- Deliver to ACER the technical report on bidding zone configuration covering 2024, 2025 and 2026, including the 70% margin

Future of the Capacity Allocation and Congestion Management

- Analyse CACM 2.0 draft, and start implementation once the amended regulation is in force

Electricity balancing

Market Committee

Electricity Balancing Regulation

- Inputs to ACER's policy options and recommendations ahead of the Electricity Balancing Regulation revision
- Co-optimisation research and development R2 report in Q2 2027, followed by R3
- Imbalance settlement harmonisation assessment by July 2027, with possible amendments to follow
- Various other assessments and monitoring activities:
    - Standard products for balancing capacity and balancing energy
    - Efficiency and effectiveness assessment of the European balancing platforms
    - Evaluation of the impact of scheduled counter-activations for the mFRR platform
    - Study on the rejection of bids in the AOF of the mFRR-Platform
    - Balancing report (short version), Electricity Balancing cost report, other reports in cooperation with Balancing platforms
    - Implementation Framework Survey to identify further harmonisation needs and potential amendments to the IFs

Ludivine Marcenac

Market transparency and REMIT

Market Committee

Transparency Platform

- New Manual of Procedures (MoP v3.6) will be released, refining the existing publications aiming for further harmonization.
- Data reporting obligations coming from CACM 2.0 and its methodologies will be addressed in 2027.
- Continuous improvements to the platform architecture and user interface throughout the year, with focus on enabling multi-vendor development and enhancing robustness, availability and security.
- Focus on data quality initiatives, such as deploying new KPIs and monitoring dashboards, strengthening cooperation among data providers and ENTSO-E, and continued release of internal quarterly monitoring reports.
- User engagement activities will continue, focusing on redevelopment of TP Knowledge Base; newsletters; user surveys and collaboration via user groups.

REMIT

- ENTSO-E will continue its support in facilitating implementation of REMIT II (EU Reg. 2024/1106):
  - Representation and advocacy for TSOs through ACER's stakeholder groups and consultations.
  - Assessment and implementation of new requirements relevant for TP (platform availability; fundamental data reporting etc.)
  - Continued service to wishing TSOs for TP to act as Inside Information Platform (IIP) and compliance with new REMIT requirements & authorization for IIPs.
  - Potential expansion of ENTSO-E's services to wishing TSOs as a 'Registered Reporting Mechanism' (RRM)

6. Leveraging Innovation for Grid Development

Key activities in 2027 | Research, Development & Innovation Committee · Information and Communication Technologies Committee

Gonzalo Morollon Castro

Research, development and innovation cycle

Research, Development & Innovation Committee

Strategic RDI Coordination, Monitoring and Delivery

- **Monitor RDI progress and identify gaps** through the 2027 RDI Monitoring Report.
- **Establish the Innovation Database** as a common evidence base for TSO innovation projects
- **Launch the next RDI cycle** and prepare the next RDI Roadmap &Implementation Plan (joint publication).
- **Mobilise EU funding and partnerships** by aligning Horizon Europe opportunities with TSO RDI priorities.
- **Strengthen stakeholder and policy engagement** with the European Commission, regulators, DSOs, research community and ETIP SNET.

Data interoperability and access

Information and Communication Technologies Committee

Implementing Acts on Data Interoperability and Access

- 🤝 Cooperation: Continue ENTSO-E and EU DSO Entity cooperation through the **JWG on Data Interoperability:** [Electricity Data Interoperability | TSO-DSO Cooperation Platform]

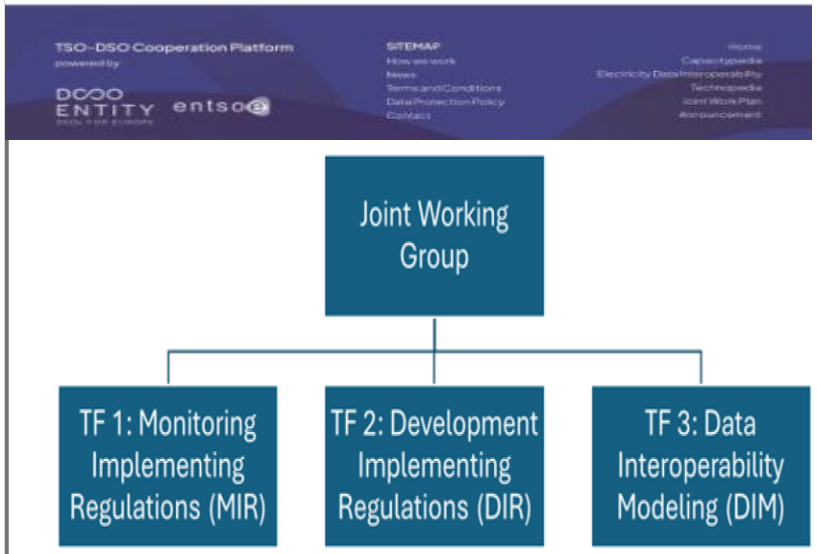
- Support the EC in monitoring and developing the implementing acts, in cooperation with relevant stakeholders.

- 📂 Repository: Maintain the **JWG Repository**, including national practices, guidance, implementing acts and interoperability models.

- Following adoption of the **Demand Response Implementing Act**:
  - Develop the Guidance Document and Technical Guide.

- Ensure alignment with relevant implementation standards.

- **Main tasks:** guide Member State reporting, collect and publish national practices, and support the EC in monitoring and further developing the reference model.



General Feedback and closing

CONNECTING EUROPE,
ELECTRIFYING THE FUTURE